



Virtual reality safe cattle handling teaching prompts

Background

This VR module emerged as part of a series of pilot programs designed to explore how current Virtual Reality (VR) and VR 360 technologies can be effectively deployed for education and training within the food and fibre sector. Beef + Lamb New Zealand worked with the Food and Fibre Cove to develop this specific video which focuses on safe cattle handling practice and utilising VR 360 technology to support learning and training goals for the sheep and beef industry. During its creation, staff and resources from WorkSafe NZ, Safer Farms, and Massey University were consulted to ensure its accuracy and relevance.

Introduction

From June 2022 to May 2023, 258 injuries were recorded that resulted in more than a week away from work, specifically related to being hit or bitten by an animal. Additionally, animal welfare reports indicate that livestock arriving at processing plants in a stressed state often led to a lower return for farmers.



This module aims to enable individuals to handle livestock safely, significantly reducing the risk of injury to both stock and people, while also ensuring high standards of animal welfare are adhered to. Furthermore, it teaches participants how to effectively position themselves and move livestock successfully and efficiently, and how their actions can influence the end product.



Teaching prompts

These prompts are designed to support discussions about cattle safety based on the Safe Cattle handling VR module.

Use these questions to stimulate conversations between students and tutors, focusing on safe practices when working with cattle.

Please note that there are two versions of the cattle content available on the headset:

- The short version (approximately 1.5 minutes) provides a brief introduction and preview of the content.
- The full version (approximately 7 minutes) takes you through the complete experience, covering how cattle see the world, how they move in response to people and dogs, and best-practice cattle handling in the yards.

1 Understanding cattle perception

Discussion starters

Q: How do cattle perceive colours differently from humans?

Cattle perceive colors differently from humans, seeing a more limited range of colors [00:58].

Q: What implications does this have for handlers?

This means handlers should be aware that bright or contrasting colors might appear differently to cattle, potentially causing unexpected reactions.

Q: The video mentions cattle have a 330-degree field of vision. What does this tell us about their blind spot?

Cattle have a wide field of vision, approximately 330 degrees [01:17]. This tells us that their blind spot is directly behind them. Handlers need to be mindful of this to avoid surprising the animals when approaching from behind.

Application questions

Q: Why is understanding a cow's line of sight important for safe handling?

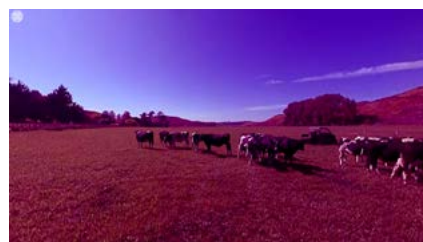
Helps you anticipate their reactions and avoid startling them.

Q: If you need to approach a cow, what would be the safest angle of approach and why?

The safest angle to approach a cow is from the side, outside of their blind spot. This allows them to see you and be aware of your presence, reducing the likelihood of a sudden reaction. Cows also have a "flight zone," which is their personal space; when you enter this zone, they will start to move away.

Q: How might wearing brightly coloured clothing affect cattle behaviour?

Cattle perceive some color, but not as much as humans. Therefore, such clothing may not significantly affect their behaviour. Instead, focus on calm movement, quiet handling, and managing your position relative to their flight zone and blind spot to avoid alarming them.



2 Flight zone and movement

Discussion starters

Q: What is a “flight zone” and how can handlers use this knowledge to their advantage?

The “flight zone” is the area around an animal that, when entered, will cause the animal to move.

Q: The video shows Jim moving cattle in a zigzag pattern. Why is this effective?

This is effective because it helps to start and maintain the herd’s movement, works with the natural behaviour of the cattle (especially the leaders), and ensures that the dogs are seen by the cattle, which is crucial for guiding them.

Q: How do handlers use the flight zone concept to start and stop cattle movement?

Handlers can use this knowledge to their advantage by entering the flight zone to start cattle movement and stepping out of it to stop them. By monitoring their position relative to the animals, handlers can move a herd effectively and without causing stress.

Application questions

Q: Describe a scenario where understanding the flight zone would help you move cattle safely.

Example: Imagine you need to move a small group of cattle from one paddock to another. By understanding their flight zone, you would approach them from the side, outside their blind spot, so they are aware of your presence. To initiate movement, you would step into the edge of their flight zone, causing them to move forward.

Q: How would you adjust your position if cattle are moving too quickly? Too slowly?

- If cattle are moving too quickly, you should step out of their flight zone to encourage them to slow down or stop.
- If cattle are moving too slowly, you need to enter their flight zone. You can move further into their flight zone to encourage them to speed up.

Q: What role do dogs play in respecting and utilising the flight zone?

They can be positioned to enter and exit the flight zone, often moving in a zigzag pattern behind the cattle, which helps to initiate and maintain movement.

3 Identifying unsafe practices

Spotting when farmers have their backs to cattle

Q: What physical cues should you look for that indicate a handler is not maintaining visual awareness of the animals?

Physical cues that indicate a handler is not maintaining visual awareness of the animals include:

- The handler explicitly turning their back to the cattle.
- The handler not fully facing the animals, which limits their ability to react to sudden movements.

Q: Why is turning your back to cattle dangerous, even with seemingly calm animals?

- Cattle can kick, and if a handler is not facing them, they are in range to be hit.
- Even quiet cattle can suddenly charge or move unexpectedly, and turning your back removes the ability to see and react to these movements.
- Without visual awareness, a handler cannot quickly identify and utilize escape routes or safe zones if an animal becomes agitated.

Discussion scenario

Ask students to watch specific segments of the module and identify moments when:

- The handler briefly loses visual contact with animals
 - The handler maintains proper positioning
 - A potential risk is created by body positioning
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4 Yard safety and crush prevention

Discussion starters

Q: The video states that over 40% of farm accidents involve livestock. What routine tasks did it mention as high-risk?

- Herding
- Drenching
- Weighing

Q: What physical features in the yards help create safe zones?

The rails.

Q: How does Jim demonstrate using the rail as a safety measure?

- Keeping one hand on the rail to quickly get up and out of the way if an animal decides to charge.
- Staying close to the rail to ensure an exit strategy is available if something goes wrong.
- This technique allows him to quickly move to safety without needing to climb completely out of the pen.

Application Questions

Q: Describe the proper technique for handling gates as shown in the video.

It's crucial to use two hands on the gate, especially pipe gates. This helps prevent the gate from hitting you if cattle kick it.

Q: Jim mentions keeping one hand on the rail in the forcing pen. Why is this important?

Provides a quick escape route. If cattle charge, you can quickly get up onto the rail and out of the way, even if it's not a full climb out.

Q: What escape routes did Jim identify while working in close quarters with the cattle?

- Using the rail: He consistently stays close to the rail to ensure he has an exit strategy to get onto it if needed.
 - Maintaining distance with a stick: Jim uses a stick to keep a safe distance from the cattle, preventing them from kicking him.
 - Awareness of surroundings: He advises being aware of your surroundings to prevent cattle from running you over from behind.
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5 Minimising Stress

Discussion starters

Q: How does Jim's tone of voice and movement speed affect the cattle?

Jim's calm tone of voice and controlled movement speed are crucial for effective cattle handling, preventing the animals from becoming startled or unpredictable.

Q: What behaviours indicate stressed versus calm cattle?

- **Stressed Cattle:** Signs of stress include agitation and aggressive behaviours like kicking, especially if they feel threatened, for instance, by a gate. This aggressive behaviour is a clear indicator of stress.
- **Calm Cattle:** Cattle that are handled safely are described as "happy and alert". Their movements are more predictable, and they are less likely to react aggressively.

Q: Why is keeping cattle calm important for handler safety?

It significantly reduces the risk of injury. Stressed cattle are more prone to kicking or charging, leading to potential crush injuries.

Application questions

Q: What techniques did Jim use to alert cattle to his presence without startling them?

- He used a stick to let the cattle know he was there, helping to maintain a safe distance and prevent kicks.
- He also placed his hand on their back to make them aware of his presence in the race and his voice.

Q: How might you adjust your approach when working with unfamiliar versus familiar cattle?

Having more than one person present and someone on the outside of the yards.

Q: What did Jim do before giving injections to ensure safety?

- He made sure to approach the cattle quietly.
- He placed his hand on their back to let them know he was there.
- He was aware of the risk of them throwing their heads back and hitting him in the face.

6 Four Key Safety Tips

Review and application

Ask students to identify and explain the four key tips mentioned in the video:

- **Know your animal**
- **Know the risks**
- **Know your safe zones**
- **Keep calm and quiet**

For each tip, have students provide:

- A real-world example of how to apply or how they might this tip
- A potential consequence of ignoring this tip
- A personal experience or observation related to this tip

Assessment Questions

1. When Jim is working in the pen, how does he maintain safety awareness?
2. What specific techniques does Jim use to avoid being kicked when working with cattle?
3. How does Jim signal his presence to cattle before administering injections?
4. What is the proper way to handle gates according to the video, and why is this important?
5. How can you tell when cattle are becoming stressed, and what should you do in response?

The goal of these prompts is to encourage thoughtful discussion rather than simple right/wrong answers. Focus on developing students' ability to observe, analyse, and apply safety principles in varied situations.

For additional assistance



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