Risk assessment rating matrix

Likelihood	Consequences			
	Extreme Death or permanent disability	**Major** Serious bodily injury	**Moderate*** Medical treatment and time away from work may be required	**Minor** First aid, no lost time
Very likely Could happen frequently	1	2	3	4
Likely Could happen occasionally	2	3	4	5
Unlikely Could happen, but rare	3	4	5	6
Very unlikely Could happen, but likely never will	4	5	6	7

*Don't underestimate moderate consequences. They could be very important — give them serious consideration.

Score	Rating	Action
1,2,3	High	Do something about this hazard immediately.
4,5	Moderate	Do something about this hazard as soon as possible.
6,7	Low	This hazard may not need immediate attention.

Tractor safety checklist

	Yes	No
Do you read the operator's manual for your tractor and follow the maintenance schedule and safety recommendations?	❑	❑
Before operating, do you conduct a visual check to ensure there are no bystanders or objects around the tractor?	❑	❑
Before operating, do you walk around the tractor and check lights, visibility, tires, and brakes?	❑	❑
Does the tractor have a **ROPS (18)** and a seat belt?	❑	❑
Do all operators wear seat belts with **ROPS (18)**?	❑	❑
Do you enforce the strict rule of no riders on the tractor?	❑	❑
Is a clean, visible slow-moving vehicle sign on the rear of the tractor or towed equipment when travelling on the road?	❑	❑
Do you lock brake pedals together before the tractor travels on the road?	❑	❑
Do you use safety hitch pins and chains when towing equipment?	❑	❑
Is a first aid kit available for or on the tractor?	❑	❑
Is a fire extinguisher available for or on the tractor?	❑	❑
Are building doors and windows open or ventilation fans turned on when operating the tractor inside the building?	❑	❑
Are tractor steps free of tools, mud, ice, snow, or debris that could cause slips or falls?	❑	❑
Do you remove keys from the tractor to deter thieves and unauthorized people from using it?	❑	❑
Do you steer clear of ditches, steep hills, and other areas where tractors can slip?	❑	❑
Do you operate front-end loaders with the bucket low to avoid tipping?	❑	❑
Have all tractor operators on your ranch received equipment training and the operator's manual?	❑	❑
Do you always lower mounted equipment before leaving the tractor?	❑	❑
Do you always hitch towed loads to the drawbar and no higher?	❑	❑
Do you use a safe method of maintaining clearance from overhead power lines when towing high loads?	❑	❑
Is the tractor's exhaust system in good condition and free of leaks?	❑	❑
Do operators always wear hearing protection if the tractor cab is not soundproof?	❑	❑
Are brakes adjusted regularly?	❑	❑

About this Infoflip

This Infoflip is meant for owners and employers who run ranching operations. It describes many of the basic rights, responsibilities, and requirements for health and safety on ranches in British Columbia. You may also find some of the information in this publication useful if you are a prime contractor, supervisor, or worker.

This Infoflip does not replace the *Workers Compensation Act* or the Occupational Health and Safety Regulation. It is not intended to explain the many health and safety requirements that apply to ranching operations. Owners, employers, and supervisors should always refer to the Act, the Regulation, and applicable guidelines for specific requirements that apply to their operations and work activities.

For more information, visit worksafebc.com.

WORK SAFE BC

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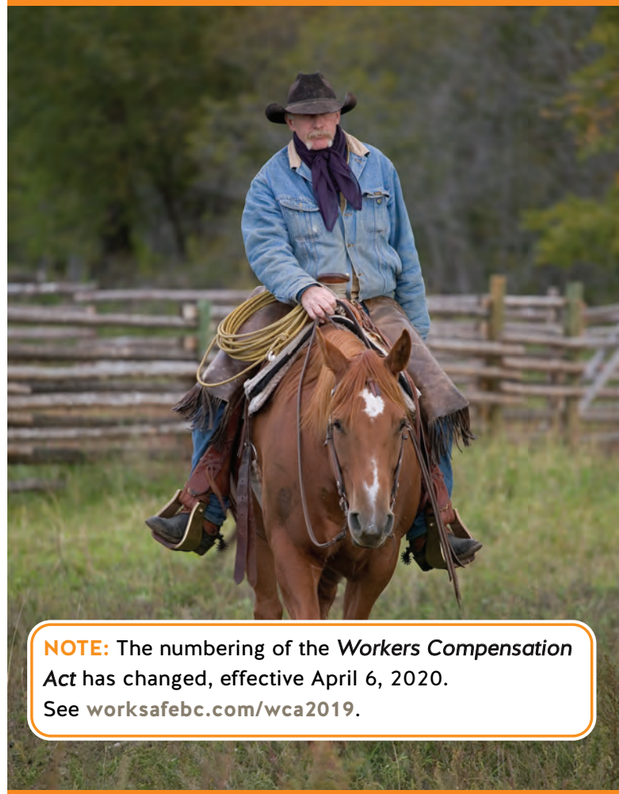
Health and Safety in Ranching

A Field Guide for Owners and Employers



NOTE: The numbering of the *Workers Compensation Act* has changed, effective April 6, 2020. See worksafebc.com/wca2019.

FARSHA

WORK SAFE BC

A. General safety practices and responsibilities

1 Owner and employer — Prime contractor

Owner and employer responsibilities

In many cases the owner of the ranch is also the employer. If you are an owner or employer, you have the following responsibilities:

- Ensure the health and safety of your workers.
- Correct any workplace conditions that are hazardous to the health and safety of your workers.
- Inform your workers about any remaining hazards.
- Make copies of the *Workers Compensation Act* (the Act) and the Occupational Health and Safety Regulation (the Regulation) available to workers.
- Ensure that your workers comply with the requirements of the Act and the Regulation.
- Ensure that your workers know their **rights and responsibilities (3)** under the Regulation and that they comply with them.
- Establish an **occupational health and safety program (4)**.
- Provide and maintain protective devices, equipment, and clothing, and ensure that workers use them.
- Provide your workers with education, supervision, and training specific to your ranch.
- Ensure that your workers are qualified to carry out specific work tasks, such as operating equipment or handling cattle.
- Consult and cooperate with your joint health and safety committee (or worker health and safety representative).
- Cooperate with WorkSafeBC and its officers.

Prime contractor responsibilities

If there are two or more employers working at the same location, safety must be coordinated. The ranch owner can either coordinate safety or delegate that responsibility to a prime contractor. According to section 118 of the Act, a written agreement is required between the owner and the prime contractor for the purposes of health and safety. In this case, the prime contractor is responsible for all safety activities. If there is no such agreement, the owner is responsible for performing the duties of the prime contractor.

Prime contractors have the following responsibilities:

- Communicate safety expectations to all contractors, subcontractors, and workers on the worksite.
- Explain the prime contractor's authority in the workplace and relationship with the owner and subcontractors on safety issues.
- Coordinate and sequence work as it relates to safety.
- Create and use procedures and processes for visitor and site orientation.
- Conduct a written assessment of high-risk situations and work timing.
- Determine the number of people expected and currently on site.
- Provide and coordinate suitable access and safe delivery of equipment and materials.
- Ensure an emergency response plan is communicated to everyone on site.
- Establish and maintain **first aid services (5 and 6)** as required under section 3.16 of the Regulation.
- Ensure that hazard identification and risk control occurs.
- Identify high-hazard processes.

1 Owner and employer — Prime contractor

Supervisor responsibilities

Effective supervision is an important part of health and safety. Larger ranches will likely have dedicated supervisors. On most small ranches, the supervisor may be one of the more experienced workers or even the owner, so he or she will have other duties aside from supervision.

Supervisors should have enough time to plan properly, before work starts. When things change, the supervisor is the most likely person to develop and carry out a new plan. Supervisors need time and opportunity to discuss planning issues with workers.

- Ensure the health and safety of workers under your direct supervision.
- Know the requirements of the Regulation that apply to the work you are supervising.
- Ensure that workers under your direct supervision are informed about all hazards in the workplace and that they comply with the Regulation.
- Consult and cooperate with the joint health and safety committee (or worker health and safety representative).
- Cooperate with WorkSafeBC and its officers.

Supplier responsibilities

Suppliers are an essential part of a ranch. They play an important part in maintaining a safe work environment. Suppliers have a number of responsibilities when supplying tools, equipment, machines, and biological, chemical, or physical agents:

- Ensure that tools, machinery, and equipment are safe when used according to the manufacturer's instructions.
- Provide directions for the safe use of all supplies, tools, machinery, and equipment.
- Ensure that biological, chemical, and physical agents are accompanied by updated material safety data sheets (MSDSs) and labelled according to all regulations and acts.

If the supplier has a leasing agreement to maintain tools, equipment, machines, or devices on your ranch, the supplier must maintain them in safe condition and in compliance with the Regulation, the Act, and any applicable orders.

Due diligence

Due diligence means taking all reasonable care to protect the well-being of employees (if you are an owner or employer) and co-workers (if you are a worker). To meet the standard of due diligence, you must take all reasonable precautions in the circumstances to carry out your work and your health and safety responsibilities.

One way for employers to demonstrate due diligence is by implementing a health and safety program. Workers can demonstrate due diligence by following the requirements of that program — for example, by using safe work procedures and wearing personal protective equipment (PPE). Demonstrating due diligence will help ensure your safety and the safety of those around you. It can also be used as a defence against monetary penalties or prosecution when requirements have allegedly been violated.

2 Supervisor — Supplier

Workers play an important role in planning, particularly where decisions related to the worksite may affect them. As a worker, you should always consider personal standards and proven work practices in your duties. You must be qualified to perform tasks through a combination of training, instruction, and controlled practice.

Responsibilities

- Take reasonable care to protect your health and safety and that of others who may be affected by your actions.
- Comply with the Regulation and other legal requirements.
- Follow established safe work procedures.
- Use any required PPE.
- Operate equipment safely, according to the manufacturer's standards and instructions. Don't disable any safety devices provided by the equipment manufacturer.
- Refrain from horseplay or similar conduct that may endanger others.
- Don't work if you are impaired (for example, by drugs or alcohol).
- Report accidents and other incidents, such as near misses, to your supervisor.
- Report to your supervisor or employer any of the following:
  - A hazard that might endanger others
  - A problem with protective equipment or clothing
  - A violation of the Regulation or other legal requirements
- Cooperate with health and safety representatives, joint occupational health and safety committees, and WorkSafeBC.

Refuse and report unsafe work

Workers have the right to refuse unsafe work. In fact, as a worker you must not carry out (or cause to be carried out) any task that you have reasonable cause to believe would create an undue hazard to the health and safety of any person.

If you discover an unsafe condition or believe that you are expected to perform an unsafe act, you must report it immediately to your supervisor or employer. The supervisor or employer who receives the report must investigate the matter immediately. If there is an unsafe condition, it must be corrected without delay. The supervisor or employer may not agree that the task is dangerous. If this is the case, sections 3.12 and 3.13 of the Regulation list the steps to be followed.

Workers must not be disciplined for refusing to perform tasks that they have reasonable cause to believe are dangerous. You may be assigned other work at no loss in pay while the unsafe condition is being investigated.

Formal OHS programs

Employers with 20 or more workers are required to have a formal occupational health and safety program. Formal programs consist of seven elements:

1. Occupational health and safety policy statement
2. Regular inspections
3. Written instructions for workers
4. Periodic management meetings to discuss health and safety issues
5. Investigations of incidents
6. Records and statistics
7. Instructions and supervision of workers

Less formal OHS programs

Employers with fewer than 20 workers require a less formal program that is based on regular monthly meetings with workers to discuss health and safety matters. Employers must do the following:

- Ensure that meetings focus on correcting unsafe conditions and practices, and making health and safety a priority on your ranch.
- Keep records of the meetings, who attended, and the topics discussed.

Note: A formal program may be required for ranches with fewer than 20 workers if a WorkSafeBC officer deems it necessary. Regardless of the size of an operation, the basic duties specified in the Act and the Regulation will still apply. Each contractor's site organization and procedures should support the prime contractor's system, not replace it.

4 Occupational health and safety programs

All workplaces, including ranches, must meet the first aid requirements in Part 3 of the Regulation. Your ranch must keep a first aid kit on site and may also require a first aid attendant. The type of kit and the need for a first aid attendant depend on three factors:

- The hazard rating for your business (ranching is classified as a high-risk industry)
- The number of workers
- The travel time to the nearest hospital

To determine your first aid requirements, use the following tables. First aid requirements are based on the number of workers per shift, so the requirements may vary for different shifts. Employers must maintain records of all workplace injuries and diseases.

In the Regulation

Sections 3.14 to 3.21, Occupational First Aid

The Guidelines for Part 3 contain more information on first aid requirements, such as contents of first aid kits, types of first aid attendants, and facilities.

First aid requirements for ranching

20 minutes or less surface travel time to hospital

# of workers per shift	Supplies, equipment, and facility	Level of first aid certificate for attendant	Transportation
1	• Personal first aid kit	N/A	At employer's expense
2–15	• Level 1 first aid kit	Level 1	At employer's expense
16–30	• Level 2 first aid kit • Dressing station	Level 2*	At employer's expense

* A Level 3 first aid certificate is required and an emergency transportation vehicle (ETV) must be provided if either of the following is true:

- On the access route to the workplace there is an obstruction, barrier, rough terrain, or other similar circumstances likely to delay the arrival of an ambulance service for more than 20 minutes after it was dispatched.
- There are areas in the workplace that an ambulance service cannot safely access and for which workers at the workplace are required to be trained, equipped, and capable of effecting rescue.

First aid requirements for ranching (cont'd)

More than 20 minutes surface travel time to hospital

# of workers per shift	Supplies, equipment, and facility	Level of first aid certificate for attendant	Transportation
1	• Personal first aid kit	N/A	At employer's expense
2–5	• Level 1 first aid kit	Level 1	At employer's expense
6–10	• Level 1 first aid kit • ETV equipment	Level 1 with transportation endorsement	ETV
11–30	• Level 3 first aid kit • Dressing station • ETV equipment	Level 3	ETV

First aid kits and attendants

Owners or employers must ensure the following:

- Tell workers where first aid kits are located and how to call the first aid attendant (if one is required on your ranch).
- Post signs around your ranch indicating how to access first aid.
- If a first aid attendant is required, he or she must hold a **first aid certificate (5 and 6)** of the level necessary for the workplace.
- First aid equipment, facilities, and attendants are accessible, and first aid is administered as soon as practicable after an injury.
- Train backup first aid attendants. Ensure that enough workers are trained for this responsibility to cover vacations and other absences.

Transportation of injured workers

Employers are responsible for the cost of transporting injured workers from the workplace to the nearest source of medical treatment. Your ranch must have posted written procedures for transporting injured workers. These procedures should include the following:

- Who to call for transportation
- How to call for transportation
- Prearranged routes in and out of the ranch and to the hospital

Records and statistics

Employers are required to keep health and safety records and statistics on file — for example, training activities, first aid treatments, and incident investigations.

6 First aid (cont'd)

7 Orientation and training

Orientations provide an opportunity for employers to establish health and safety guidelines before workers start at a new job or location. Health and safety training should be an ongoing process. Provide instruction to workers whenever there are changes in the workplace, such as a new work process or piece of equipment.

Orientation topics

An orientation should include the following:

- Tell workers not to perform any task they are not trained to do safely.
- Tell workers about the hazards they may encounter while performing assigned tasks.
- Encourage workers to ask questions if they are unsure of anything.
- Tell workers how to report hazards and unsafe work conditions.
- Give workers contact information for the joint occupational health and safety committee (or worker health and safety representative).
- Explain **worker rights and responsibilities (3).**
- Train workers in relevant policies and procedures if they are assigned to work alone or in isolation. Employers must have a system for checking on the well-being of workers.
- Tell workers about potential emergency situations. Train them in emergency response procedures.
- Train workers on what to do if there is violence in the workplace.
- Train workers on the use and care of required PPE or clothing.
- Tell workers how to report injuries or illnesses to WorkSafeBC.
- Provide workers with instruction and hands-on training (not just a verbal description) of tasks they will be required to perform. Workers may require more training as new tasks are assigned. Hands-on training should address the aspects of the work that are risky if not performed correctly.
- Educate workers about the occupational health and safety program for your workplace.

First aid information

Ensure that workers know the following:

- Where first aid facilities are
- How to summon first aid
- How to report illnesses and injuries
- Who the first aid attendants are and how to summon them

Workplace hazardous materials information system (WHMIS)

Provide workers with an orientation for the workplace hazardous materials information system (WHMIS). The orientation should explain the WHMIS hazard classes and the use of WHMIS and MSDSs. Workers should understand the following four WHMIS training objectives:

- What the product hazards are
- How to protect themselves
- What to do in case of an emergency or spill
- Where to get more information on the products

7 Orientation and training

Identifying hazards, assessing the risks, and controlling the hazards are essential for keeping your workers safe from injury.

Identify the hazard.

What are the hazards on your ranch? You can identify hazards through:

- Observation
- Inspection
- Testing
- Communication and consultation with workers and contractors
- Review of injury statistics and incident investigations

Assess the risks.

Once you've identified hazards, the next step is to assess the risks associated with them. A risk assessment will help you prioritize hazards so you know which should be dealt with immediately and which can be dealt with later. When assessing risks, try to determine how likely an incident is and how serious it would be.

A. Determine the likelihood of an incident.

How likely is it that the hazardous condition or situation will result in an incident?

- Very likely — Could happen frequently
- Likely — Could happen occasionally
- Unlikely — Could happen, but rarely
- Very unlikely — Could happen, but probably never will

Consider:

- How frequently a worker will be required to work near a hazard
- The number of people exposed to the hazard and the duration of exposure
- The training, skills, and experience of workers performing the task
- The presence or absence of qualified supervisors
- The position of the hazard relative to operators and other hazards
- Worker characteristics, such as age, vision, and hearing

8 Identifying hazards — Assessing risks

B. General safety practices and responsibilities

B. Determine the potential consequences of an incident.

If an incident does occur, how serious will it be?

- Extreme — Death or permanent disability
- Major — Serious bodily injury
- Moderate — Medical treatment and time away from work required
- Minor — First aid, but no time off work

Consider:

- The potential for a chain reaction (where a hazard develops into a more dangerous situation)
- Proximity of workers to the hazard
- Quantity of a chemical being used
- Size of equipment, forces, and energy level
- Emergency response preparedness

C. Assign a risk rating to the hazard.

Once you've determined the likelihood and consequences of a potential incident, use the **Risk Assessment Rating Matrix (back cover)** to assign a risk rating to the hazard. Cross-reference the appropriate Likelihood row with the Consequences column to produce a number from one to seven. One is the highest degree of risk and seven the lowest.

Then, refer to the box below the matrix to determine whether the hazard has a high, moderate, or low level of risk. Each risk level has a corresponding recommended action.

Before using the matrix, make sure you've done a thorough assessment to ensure you understand all aspects of the hazard, including all tasks and work associated with the hazard. If you are considering more than one hazard, the matrix rating system will help you prioritize the hazards.

9 Assessing risks (cont'd)

Once you've identified hazards and assessed the risks associated with them, you need to find ways to control those risks. The best form of risk control is to eliminate the hazard entirely, if possible. If that is unrealistic, minimize risks as much as possible by using other control measures.

Hierarchy of control

Some types of controls are more effective than others, although it may not always be practicable to use the more effective solution. Whenever possible, though, controls must be implemented in the following order of preference:

1. Elimination or substitution
2. Engineering controls
3. Administrative controls
4. PPE

You may need to use a combination of strategies to achieve the best protection — for example, a tractor cab (engineering control) and hearing protection (PPE) to minimize noise exposure.

1. Elimination or substitution

Whenever possible, eliminate the hazard so there's no risk of injury. Consider the following:

- Is the task necessary to begin with?
- Can the task be done in such a way that no workers are exposed to the hazard?
- Can you remove the hazardous part of the task?

If you can't eliminate the hazard, substitute a safer material or process. Consider the following:

- Can you use a different machine or tool?
- Can you use a less hazardous material or chemical?
- Can you use or develop alternative work practices?

2. Engineering controls

If you can't eliminate a hazard, it may be possible to reduce the risk by designing safeguards for equipment. Engineering controls deal with the hazard right at the source, by adding safety features to machinery or by redesigning a system or task.

A familiar example of an engineering control for a long-standing hazard is the use of a **rollover protective structure (ROPS) (18)**. Control measures that are built in by design are reliable and their success does not depend on individual judgment, training, or decision-making.

10 Controlling hazards

3. Administrative controls

Where engineering controls are not possible (for example, when using older equipment that best suits the task), consider administrative controls. These involve the use of policies or written safe work procedures to minimize exposure to a hazard. Administrative controls include reduction of exposure time, worker training, and education. As an employer, you may decide to adopt a company policy that requires everyone to follow specific procedures to reduce the risk of injury. Supervision of workers is essential for administrative controls.

There are a few downsides to administrative controls:

- Workers may not understand the seriousness of a hazard or they may underestimate the risk.
- Workers may not remember all the steps of a procedure.
- Workers may feel pressure to cut corners.

You must be especially vigilant with administrative controls to ensure that worker exposure to the hazard is effectively controlled.

4. Personal protective equipment (PPE)

You should only use PPE as a last resort, when it's not possible to reduce risk in any other way. Alternatively, it can be used in addition to another control. The use of PPE means the hazard still remains and the risk cannot be reduced at its source.

Workers who use PPE must understand the hazards and accept the importance of using PPE consistently and correctly. PPE must also be chosen, used, and maintained correctly. Workers must be trained in its use and care.

Choose the right control for each hazard.

In many cases, controls are already built in by design (for example, tractor cabs have ROPS), so there's not much more for the employer to do other than ensure operators use their seat belts. However, in some situations, you will need to choose a control that is appropriate to the situation. Whenever this is the case, you are required to follow the hierarchy of controls and adopt the most effective method possible under the circumstances.

A control is considered appropriate if it meets the following criteria:

- Tailored to the hazard and risk level in a given situation
- Meets the intent of the law
- Practicable for the workplace, given its size and resources

Monitor and review the control measures.

Determine whether your controls have been implemented as planned:

- Are controls in place?
- Are workers using them?
- Are workers using them correctly?

Determine whether chosen controls are working:

- Have changes had the expected result?
- Has exposure to the identified hazards been eliminated or adequately reduced?

11 Controlling hazards (cont'd)

What is lockout?

Lockout is the use of a lock or locks to render machinery or equipment inoperable or to isolate an energy source. The purpose of lockout is to prevent an energy-isolating device (such as a switch, circuit breaker, or valve) from accidentally or inadvertently being operated while workers are performing maintenance on machinery or equipment. Lockout makes sure machinery or equipment won't start or move and injure a worker. Lockout can also include removing keys from tractors, loaders, or other machines to ensure that they can't be started while being worked on.

In the Regulation

See Part 10, De-energization and Lockout

Why is lockout important?

Tasks such as maintaining, repairing, adjusting, cleaning, and lubricating equipment are important on ranches. Equipment on your ranch may include **augers (24), tractors (17),** combines, **balers (19),** mowers, discs, rakes, trucks, and hoisting equipment. When maintaining or repairing equipment, workers may have to deal with hazardous energy sources, including mechanical and electrical energy, compressed gas, hydraulic pressure, tensioned springs, or elevated objects (gravity).

Failure to properly isolate and control energy has led to serious injuries and fatalities on ranches. Controlling or isolating hazardous sources of energy means stopping and securing the machine, process, or system and protecting the worker by eliminating, controlling, or guarding against the danger of uncontrolled release of hazardous energy.

Lockout basics

The first step is to eliminate or isolate the energy source and de-energize the system wherever possible. Examples include the following:

- Shut down machines or equipment. Remove the ignition key, if there is one.
- Open circuit breakers or main disconnect switches.
- Eliminate material from an auger to prevent the auger from rotating because of gravity.
- Disconnect and de-pressurize compressed air tools.
- Lower or block hydraulic systems and implements.

The second step is to apply a lock to guarantee that the source of energy won't be turned on and stored energy won't release and re-energize the equipment.

13 Lockout requirements and procedures

Section 10.2 of the Regulation states the following:

If the unexpected energization or startup of machinery or equipment or the unexpected release of an energy source could cause injury, the energy source must be isolated and effectively controlled.

Effective control typically means locking out the source of energy.

Before starting work

When equipment is shut down for maintenance, workers must not perform work until all of the following have occurred:

- All parts have been secured against inadvertent movement.
- The hazards have been effectively controlled.
- All relevant energy isolating devices, such as switches and valves, have been shut off and locked out in the off position.

Before workers start work on equipment, procedures for lockout must be established as required by section 10.4 of the Regulation. When developing procedures, you must do all of the following:

- View the location where the work will be done.
- Identify all relevant energy sources.
- Assess the risk of possible injury to workers from the release of energy or inadvertent movement of equipment.

Situations where locks are not required

Section 10.11 of the Regulation states that the application of a lock is not required if either of the following is true:

(a) the energy isolating device is under the exclusive and immediate control of the worker at all times while working on the machinery or equipment, or

(b) a tool, machine, or piece of equipment which receives power through a readily disconnected supply, such as an electrical cord or quick release air or hydraulic line, is disconnected from its power supply and its connection point is kept under the immediate control of the worker at all times while work is being done.

For example, an energy-isolating device, such as a circuit breaker for a piece of electrical equipment, is under the exclusive and immediate control of a worker if **both** of the following are true:

- The energy-isolating device is easily visible to the worker doing work on the equipment

AND

- It is located so that any move by another worker to activate the isolating device will be immediately obvious to the worker performing the task

In some circumstances, no one else may be present, which helps ensure the energy-isolating device is under the exclusive control of the worker.

An example of a situation where a worker has immediate control of the connection point of a power supply is with circular saws or other corded electrical equipment. As long as the worker controls the use of the plug, there is no need for locks.

13 Lockout requirements and procedures

14 Fall protection

Employers are required to have a fall protection system in place if workers are working at heights of 3 m (10 ft.) or more. For work at heights of 7.5 m (25 ft.) or more, there must be a written fall protection plan, unless the location has permanent guardrails. Employers must assess the potential hazards involved in any work at heights and ensure that workers use appropriate fall protection for the task.

In the Regulation
See Part 11, Fall Protection

1. Guardrails

Properly constructed guardrails are generally the best type of fall protection. Once installed, they protect all workers on that work surface.

Guardrails are a practical control on elevated ramps and walkways, and on the roofs of tanks and silos where permanent access is provided by stairs or fixed ladders. Guardrails are often practical on the open sides of haylofts, but in some cases other types of fall protection may be appropriate. If guardrails aren't practical, you must consider the next best available option: a fall restraint system.

2. Fall restraint

Fall restraint systems prevent workers from falling by restraining their travel so they can't get close to the unguarded edge of a work surface. Typically, the worker wears a safety belt or harness connected to a lanyard or lifeline tied to a safe anchorage point. The worker adjusts the lanyard or lifeline to a length that will prevent him or her from moving to the open or unguarded edge.

Personal fall restraint systems are practical for repairing low sloped roofs or in situations where a section of guardrail has to be removed to facilitate work.

A fall restraint system may also apply to an area of work. For example, an option for work on haylofts is the use of retractable netting by the work area, positioned and tensioned to provide fall restraint. If guardrails and fall restraint systems are not practical, the next level of fall protection to consider is fall arrest.

14 Fall protection

3. Fall arrest

Fall arrest systems are designed to catch falling workers before they strike the surface below. These systems consist of either safety nets or fall arrest harnesses, lanyards, and lifelines connected to a substantial point of anchorage.

Fall arrest systems are most practical when a worker is on a narrow work surface or working at the edge of a structure and is required to reach beyond the safe work area. Fall arrest systems may be appropriate during building construction (for example, installing trusses and the roof sheathing on a barn).

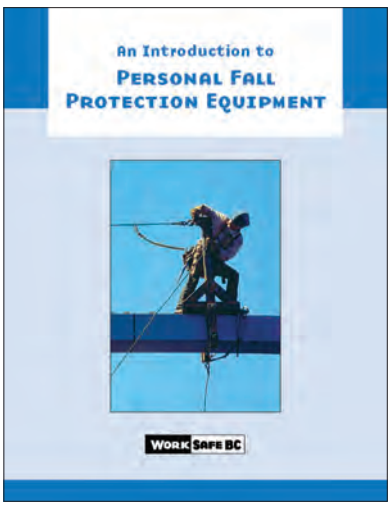
Personal fall restraint and fall arrest systems may not be practical if an anchor point of sufficient rated capacity is not available. The final means of protecting workers against falling is to minimize the risk by using work procedures.

4. Work procedures

Work procedures include careful planning of the work, as well as instruction, training, and supervision of the workers to carry out the tasks safely. Work procedures must take into account the type of work, environmental conditions and hazards, worker experience, and the length of time the task will take. An example of work procedures being used in place of conventional fall protection systems is light-duty work on ladders, such as small painting jobs while standing on an extension ladder.

Work procedures can only be used as the method of fall protection when other conventional means are not practical. In some cases, they may be used in combination with other forms of fall protection.

For more information on fall restraint and fall arrest systems, see the WorkSafeBC publication *An Introduction to Personal Fall Protection Equipment*. You can also find other information on fall protection requirements in the Guidelines that accompany the Regulation.



A confined space is an enclosed or partially enclosed area that's big enough for a worker to enter. The space may be enclosed on all sides (for example, a tank) or as few as two sides (for example, an enclosed conveyor). Confined spaces are not designed for someone to work in regularly, but occasional entry may be necessary for inspection, cleaning, maintenance, or repairs.

Confined spaces can be hazardous to enter. For example, the space may lack oxygen or contain toxic gases or an explosive atmosphere.

Workers must not be allowed to enter confined spaces unless proper training, equipment, and procedures are in place. A worker is considered to have entered a confined space just by reaching into or putting his or her head into the opening. If the confined space contains toxic gases, even workers near the opening may be at risk of injury or death.

Five basic steps for confined spaces

1. Identify the confined spaces on your ranch.
2. Post warning signs and secure entry to confined spaces.
3. Determine the hazards for each space.
4. Educate your workers about confined spaces.
5. Determine which spaces need to be entered.

Note: Confined spaces can be extremely dangerous. Dealing with them safely is a complex process. If it is necessary to enter a confined space on your ranch, you will almost certainly need to get help from a qualified person. If you are identifying confined spaces,

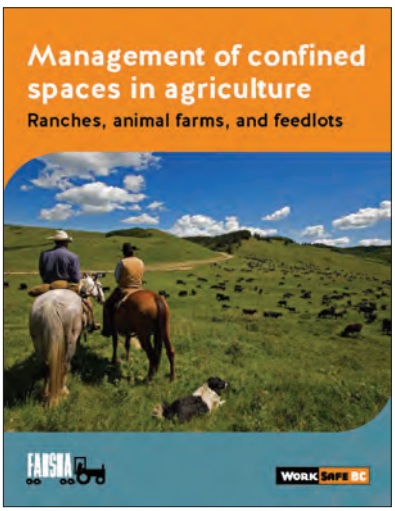
even though it's not a requirement you should also hire a qualified person to help you.

Get help from a qualified person.

A qualified person is someone who has training and experience in recognizing, assessing, and controlling the hazards of confined spaces. A qualified person is required for the following:

- Determining the hazards for each confined space
- Developing safe work procedures before workers enter confined spaces
- Testing the atmosphere in a confined space
- Developing rescue procedures

For more information on confined spaces, see the WorkSafeBC publication *Management of Confined Spaces in Agriculture: Ranches, Animal Farms, and Feedlots.*



C. Working with equipment

Every tractor and implement has an operating manual. If you don't have one, ask your equipment dealer for one or search for it online. Operators must read and understand the manuals and follow all of the safety-related instructions and warnings.

Replace shields and guards.

Check to see that all shields and guards are in place. If any are missing, replace them before starting work.

Don't do any maintenance when the tractor is running and the power take-off (PTO) and drive lines are operating. First shut off the tractor. Wait until all movement has stopped and all pressures have been released before doing maintenance.

Attach implements and loads safely.

Attach implements and loads only to the draw bar or hitch point. Hitching a chain or cable to any point above the draw bar can cause the tractor to flip over backwards. Hitching to other parts of the tractor will misalign the PTO shaft. Make sure implements are compatible with the tractor, taking into consideration the size and power of the tractor.

Balance the tractor.

Understanding the centre of gravity and balancing the tractor is essential. Remember that stability and balance can change from one field to another and from field to highway travel. Use wheel weights, front weights, ballast in the tires, or other weighting methods approved by the manufacturer to keep the tractor stable.

Don't allow extra riders.

Don't let anyone ride in the cab or on the tractor cowl. The rule is: **one seat – one seat belt – one operator.**

Know your working area and field conditions.

Before using a tractor, locate obstacles and hidden hazards, such as stumps, large stones, irrigation pipes, ditches, steep banks, mud, and holes. If you can't remove a hazard, mark or flag it, if possible.

Slow down on rough ground. If it is necessary to get up a steep slope, consider backing up the slope.

Slow down before making turns, and begin to turn the wheels before applying the brakes. Avoid sharp downhill turns.

To get out of a deep ditch or mud hole, consider backing out. Move slowly and deliberately. If the tractor feels unstable, don't risk a rollover. Instead, call for a tow. Stay at least as far away from the edge of a ditch as the depth of the ditch itself.

When crossing over bridges or ramps, be sure the bridge or ramp is strong enough for the combined weight of the tractor and load. Check that the bridge or ramp has appropriate bull rails and is wide enough for the tractor and any implement you may be pulling.

When on a hill, keep side-drawn implements on the uphill side. Operate up and down rather than across steeper terrain.

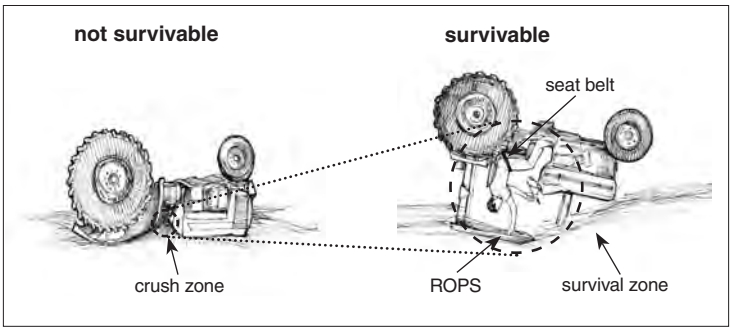
Avoid operating close to drop-offs, sheer points, ditches, and cliffs.

Stay alert.

If you feel tired or sleepy, stop immediately. Get off the tractor, stretch, and take a short break.

18 Rollover protective structures (ROPS)

Rollover protective structures (ROPS) combined with seat belts save lives. If a tractor without ROPS rolls over, it can crush the operator under the machine. ROPS create a survival zone, and the seat belt keeps the operator in that space.



ROPS requirement

Because many fatalities and serious injuries have occurred with tractor rollovers, section 28.41 of the Regulation specifies that tractors must have ROPS. Workers must not drive or use an agricultural tractor as part of agricultural operations on farmland unless the tractor is equipped with a ROPS.

Note: Seat belts must be used when operating an agricultural tractor with a ROPS.

ROPS exception

The only exception is if a qualified person performs a risk assessment and determines that the agricultural tractor can be used safely with a low risk of rollover, **and** if any of the following conditions apply:

- The agricultural tractor was manufactured before January 1, 1985.
- The tractor is a low-profile agricultural tractor used in locations with low overhead clearance, such as in buildings or in an orchard with a low canopy. However, when leaving a building or coming out from under a canopy of trees, a ROPS must be used.
- The tractor is fitted with implements that are incompatible with a ROPS.

Definitions

For a definition of *qualified,* see section 1.1 of the Regulation.

For a definition of *risk assessment,* see section 28.41 of the Regulation.

Notice for tractors not equipped with ROPS

If the risk assessment shows that an agricultural tractor without a ROPS has a low risk of rollover, the employer must permanently post a notice that is legible and visible to the operator. The notice must state the following:

- The tractor does not have a ROPS.
- The tractor may be used only in areas and for activities authorized by the employer.

18 Rollover protective structures (ROPS)

19 Round balers

The following safety guidelines for working with round balers were developed by the South Australian Department of Education and Children's Services and are used with their permission.

Personal protective equipment

- Foot protection
- Eye and hearing protection
- Sunscreen, broad-brimmed hat, and long-sleeved shirt
- Close-fitting clothing to prevent entanglement

Preparing to work

- Follow the manufacturer's safety recommendations.
- Ensure all guards are in place, especially the power take-off (PTO) guards. Inverted U-shaped guards are inadequate.
- Check for bent teeth and loose or missing nuts, bolts, or screws.
- Replace bent or missing pickup teeth to ensure effective feeding of material into the feed rolls.
- Inspect all belts and chains for wear or breakage. Maintain belt tension according to the manufacturer's recommendations.
- Match belt lengths to prevent slippage, which can cause blockages and heat buildup.
- Before replacing a belt or chain, consult the operator's manual for instructions on securing the upper chain or moving load from the belt tension springs.
- Ensure the slip clutch, roll scraper, and rear gate latch are adjusted and functioning according to the manufacturer's recommendations.
- Ensure the hydraulic hoses are clean, in good repair, and hooked up correctly.
- Ensure the baler is attached as specified by the manufacturer.
- Ensure the twine feeding and cutting mechanisms are working properly and the twine is in good condition.
- Don't use faulty equipment — report it immediately.

Operating the machinery

- Operate the machine at a safe speed.
- On rough terrain or hillsides, avoid holes or obstacles that can tip a windrower or throw you from the machine.
- Don't feed material into the baler with your hands or feet.
- Don't hand feed or remove twine from a running machine.
- When ejecting a bale, ensure the area behind the baler is clear before raising the tailgate. Don't eject on a downward slope as the bale may continue to roll.
- If you need to remove a blockage, make an adjustment, or repair the baler, first disengage the PTO and turn off the tractor. Then, lock the tractor brakes, remove the ignition key, and chock the baler wheels. Ensure all moving parts have completely stopped.
- If you will need to open the tailgate for maintenance or repair, install a mechanical hydraulic cylinder lockout device to prevent the gate from closing accidentally.

Housekeeping

- Remove grease and grass buildup from moving parts.
- Clean the baler to remove accumulated crop debris.

19 Round balers

Potential accidents

- Workers standing on the ground in the equipment operator's blind spot can be struck or crushed by the equipment.
- Operators or helpers can become entangled in moving parts — the leading cause of amputations in agriculture.
- Workers jumping down from equipment and landing on slippery or uneven ground can suffer ankle or leg injuries.
- Workers repairing equipment that is not properly locked out can be killed or injured.

Operators of moving equipment

- Operators must be competent and qualified to use farm implements.
- Use implements only as the manufacturer intended. Follow all of the manufacturer's safety precautions.
- Shut down malfunctioning tractors and implements, and repair them promptly. Preventive maintenance is the best approach.
- All guards and shields must be in place. If a safety guard has been removed for maintenance or to clear a jam, replace it before operating the equipment.
- Know where people on the ground are at all times. Don't start to move or operate equipment without being certain that no one is in danger.
- If you are moving an implement on a road, you must display a slow-moving vehicle sign on the back end of the equipment. If the tractor or implement has flashing warning lights, turn them on.
- All warning signs and decals on the implement must be maintained. If a sign or decal becomes unreadable, get a replacement from your equipment dealer.

Make sure young children and people who are not familiar with farm equipment are at a safe distance. Create a safe zone for children. Don't allow them to play around equipment or in maintenance yards and buildings.

Workers near moving equipment

- Wear high-visibility apparel to ensure the equipment operator can see you. Farm implements have large blind spots — the operator may not know where you are. If the implement is noisy, even a shout may not be enough to warn the operator you're in danger.
- Never step over a moving drive line or PTO. Stay clear of all moving parts. If you need to clear a jam, step back and signal the operator to stop the equipment first.
- If you must approach the operator of moving equipment, signal from a safe distance until the operator sees you. Don't approach the equipment until the operator has shut it off.

20 Farm and ranch implements

21 Irrigation systems

Each year in Canada, farm and ranch workers are injured or killed while working with irrigation equipment and appliances. Electrocution is a serious risk when working with irrigation equipment.

In B.C., the most common types of field irrigation systems are as follows:

- Pivot lines (central pivots)
- Wheel lines (linear motor-driven wheels)
- Hand lines (carry lines)
- Stationary big guns
- Reel lines, travelling guns, and hose lines (Bauer-style couplings)

Irrigation systems can be powered in the following ways:

- Water powered
- Oil hydraulic
- Engine gear driven
- Gravity fed
- Electrically powered

Safe work procedures

There are special safety considerations for each type of system. Irrigation workers must be trained and knowledgeable in their safe use. Your safety program should include written safe work procedures for irrigation systems.

Owners and employers must read and follow the manufacturers' safe work procedures specific to each type of system. You can order manuals and related information from equipment manufacturers and distributors. Many manufacturers also have this information on their websites.

21 Irrigation systems

Other safety tips

- To avoid electrocution, stay well away from irrigation systems when thunderstorms are near. Lightning can strike more than a kilometre away from a thunderstorm.
- Stay clear of all power lines, including communication cables. Look out for overhead power lines when moving irrigation pipes by hand. The limits of approach vary for power lines, depending on the voltage of the line (see Table 19-1A, below, from the Regulation). The minimum safe distance for most power lines is 3 m (10 ft.), but higher voltages require a greater distance for safety. Check with your local power utility company for specific safety recommendations for lines in your area.

Table 19-1A: Minimum approach distance for working close to exposed electrical equipment and conductors

Voltage, phase to phase	Minimum distance	
	Metres	Feet
Over 750 V to 75 kV	3	10
Over 75 kV to 250 kV	4.5	15
Over 250 kV to 550 kV	6	20

- Electrically powered central pivot systems need regular inspection and maintenance for the electrical systems. A qualified electrician who knows the system should do this maintenance. Workers must also be trained in a written lockout procedure for the system.
- Electrically powered systems must be properly grounded. If you experience a tingling sensation, it could be a warning sign of a serious hazard.
- Protective guards must be in place for all motors, sprockets, gears, drive lines, chains, and belts. Don't stand or work near moving parts without first shutting down the system. Never reach under a guard or shield while the system is operating.
- Always shut water off at the main line before closing downstream valves. Water can create considerable force when moving under pressure. When water comes up against a closed valve or when a valve is closed too quickly, a "water hammer" of thousands of pounds can occur.
- The force in a pressurized water line can blow apart a valve and violently spray out water and pieces of broken metal. When shutting off a valve on a pressurized line, stand with your face and body away from the valve stem. Close the valve slowly.
- When workers are repairing central pivot systems at a height of 3 m (10 ft.) or more above the ground, fall prevention and arrest equipment must be available. The irrigation or farm supervisor must ensure that workers are trained in how to use the equipment and that they actually wear and use it as required.
- Don't stand or work on or directly over pressurized lines, fittings, valves, or towers.
- Never drink water from the irrigation system.
- For more information on irrigation system safety, contact your equipment manufacturer or supplier.

22 Irrigation systems (cont'd)

23 Chainsaws

Operators should be fully trained and competent in the use of chainsaws.

Personal protective equipment

- Hard hat
- Gloves
- Steel-toe boots
- Hearing protection
- Eye and face protection — use a wire-mesh face screen
- Leg protection — protective pants are mandatory when using a chainsaw

Preparing to work

- Read and understand the operator's manual
- Keep your chainsaw clean.
- Ensure adequate oiler operation.
- Rotate the bar before reinstalling. Check the bar tip sprocket for easy rotation. If it doesn't rotate freely or has excessive play, replace the tip. Grease when required.
- Ensure the chain brake mechanism is functioning properly.
- Inspect the chain for kinks, broken links, and excessive wear.
- Check and adjust the chain tension. File the chain as required.
- Replace the chain catcher if it is missing.
- Tighten all bolts and screws and replace any that are missing.

Operating chainsaws

- Start the chainsaw in an area where you have good footing, away from people and clear of obstructions, limbs, or debris that could cause a kickback.
- Engage the chain brake before starting the saw and when moving from cut to cut.
- Maintain firm comfortable grip to keep control of the saw. This provides for reaction time in case of kickback.
- Place one hand on the handlebar, the other on pistol grip and throttle.
- Hook your thumb under the handlebar to stop your hand from slipping onto the chain in case of kickback.
- Use well-fitting gloves for a safer grip.
- Keep your handlebar arm straight. This creates a pivot point at your shoulder, which tends to toss the chainsaw over your shoulder if a kickback occurs.
- Maintain solid footing, good balance, and a natural posture when cutting. Stand with one leg forward and one leg back to form a stable stance. Always keep both hands on the saw.
- Hold the saw close to the side of your body to provide more control.
- Work to one side of the saw. Never stand directly behind the saw or straddle it.
- Learn to use the saw both left- and right-handed so you can work from the safest position.
- Pull the saw smoothly out of cuts.

23 Chainsaws

Preventing kickback

- Work with a properly filed chain and raker heights, a well-maintained chain brake, and a properly tensioned chain. Consider using a safety or anti-kickback chain.
- Don't overextend your reach with the chainsaw. Dog in where necessary to stabilize the saw.
- Always use the saw with a pulling chain. Avoid backbaring to reduce the risk of kickback from the chainsaw being pushed towards you.
- Don't let the bar tip contact any obstructions while the chain is moving.
- Remove brush and saplings from the area. While limbing, be careful with limbs under tension.

Augers and elevators

You may use an auger or elevator on your ranch to move grain or feed. The most common injuries that occur with augers are as follows:

- Entanglement of hands, arms, or feet in moving parts
- Crushing, if the auger collapses while being moved
- Electrical shock or electrocution if the auger contacts a power line

Guarding

All machinery and equipment must be properly guarded to prevent clothing, loose hair, or body parts from getting caught in moving parts. On an auger, cover the exposed flighting (the blades of the turning screw) with a grate or baffles. If a guard is missing, don't operate the auger until you have replaced the guard. Your equipment dealer should be able to order a new guard or advise you about a replacement.

Lockout

Always turn off machinery before trying to unplug a jam.

Moving equipment

Augers and portable elevators are tippy and unstable. Don't try to move them alone.

Before moving equipment, walk the route. Make sure there are no obstacles on the ground and there is enough space for turning. If there are power lines or other hazards overhead, plan a safer route.

Lower the equipment to a horizontal position before moving it. If possible, use a tractor to move it rather than pushing it by hand.

Augers and elevators will conduct electricity if they contact power lines. A worker touching or standing close to the equipment will be the easiest path for the electricity as it runs to the earth — this electrical contact is usually fatal.

When working around augers or elevators, make sure the ground is solid, not slippery, and free of clutter. If you are tired or losing attention, stop and rest.

Note: People should never ride in or on an auger.

D. Working with cattle

25 Cattle behaviour

Handling cattle always involves a risk of injury from crushing, kicking, butting, or goring. Certain jobs, such as processing, calving assistance, and veterinary tasks, may increase the risk further. Injuries from cattle can be related to the following:

- Inadequate yard and facility design
- Lack of handler training
- Unsafe work practices
- Working on foot with cattle that are accustomed to being worked from horseback
- Failure to have an escape plan

Routine is comfortable and reassuring to animals. They move and live best when familiar with feeding, moving, and handling patterns.

Cattle can remember specific incidents and people, particularly if an incident was frightening, painful, or stressful.

Excitement and agitation among cattle is contagious. One agitated animal can affect the entire group. Herd animals, such as cows, sheep, and horses, have a strong instinct to move as a group. They become agitated when separated from the group.

Cattle have strong herd and protective instincts. Cattle can act aggressively toward children. Keep children away from cattle at all times.

The risks for handlers can increase in unexpected or unusual circumstances. For example, animals fear fire and may react to smoke in the air before you notice it.

"Slow is fast"

It can take 20 or more minutes for a stressed animal to relax and become more manageable. You'll save time in the end if you pay attention to behavioural cues and slow down when the animal seems to be growing agitated.

While many cattle react predictably, this can change quickly. "Friendly" livestock can be as dangerous as angry or defensive livestock. No two animals are alike. Never turn your back on livestock.

Bulls are more aggressive during mating season and can be extremely dangerous when fighting. Hand-reared bulls are especially dangerous because they may try to exert dominance over the handler. Separating bulls into different yards when appropriate will reduce the risks for handlers.

Cows and heifers may be most likely to charge when they are acting in defence of a young calf. First-time calvers may change and become very dangerous. Use caution when working with all calving animals.

Weaning has risks. Separation can cause stress, and animals may react aggressively. Consider all the options for weaning, including mounted riders and facility design.

25 Cattle behaviour

26 Identifying signs of distress or aggression

Signs of distress

Animals go through a series of reactions as they become agitated. This is a chance for you to slow down and consider the source of the stress or distraction. Remove the stressor, if possible, and allow the animals to calm. Be alert to changes — don't ignore behavioural cues.

Watch for the following signs of distress, fear, or alarm:

- Avoiding contact with others in the herd or group, or showing disinterest in the surroundings
- Rubbing or pressing the forehead on solid surfaces
- Moving erratically, staggering, moving in pointless circles, shuddering, or shivering
- Vocalizing excessively or repetitively

Signs of aggression

Some cues are signs of aggression and may be a warning of a possible attack:

- Pinned or raised ears
- Rapid tail movements, flicking, or repetitive swinging
- Hackle hairs raised on the back of the neck
- Pawing
- Snorting
- Feigned charging behaviour
- Standing sideways and not "stepping off," head raised and focused intently on handler

If you understand an animal's "flight zone" and its "point of balance," you can use the animal's natural behaviour to move it in the easiest possible way.

Flight zone

The flight zone is the space around an animal that determines its reaction to a person or another animal. As you move into an animal's flight zone, it will start to move. If you suddenly intrude upon an animal's flight zone and it feels cornered, it may panic and run you over.

The size of a flight zone for an animal or a group of animals depends on the following:

- Handler's angle and speed of approach
- Animal's familiarity with the handler
- Sound or visual contact with the handler
- Wildness or tameness of the animal
- Animal's recent experience

Point of balance

If you approach an animal head-on, it will move away in the opposite direction. Instead, you can find the point of balance at the animal's shoulder. If you stand in front of the point of balance, the animal will balk or move backward. If you stand at or just behind the point of balance, the animal will be encouraged to move forward.

26 Identifying signs of distress or aggression

27 Cattle handling

Animals are at their best when their lives are tranquil and the environment is comfortable and predictable. When handling cattle, move slowly and deliberately. Be patient, and don't prod animals when they have no place to go. Some cattle handlers believe that cattle are responsive to soothing talk, hand signals, and even singing.

Guidelines for handling cattle

- Approach cattle quietly and make sure they are aware of your presence.
- If you can touch the animal, alert it to your presence with a gentle voice and then a touch rather than a bump or shove. Avoid surprising and startling the animal.
- Don't talk loudly, clatter, or bang equipment around cows.
- Always plan an escape route in advance. You may have to move quickly to avoid injury. Even gentle cows can become dangerous.
- Cattle tend to kick forward, then back. Ensure that legs are secured and the animal is unable to kick while you are working in the udder or flank area.
- When approaching an animal that is down, approach from the spine side of the animal.
- When moving cattle through a gate, avoid crossing the gate opening. Work from one side to avoid being knocked down by an animal and to aid cattle flow.
- Curved, smooth-sided chutes take advantage of the natural circling behaviour of cattle. As the animals go around the curve, they feel they are going back to where they came from. You can also avoid distractions that might make them balk.

- Take extra care when working with cattle in a squeeze.
- When closing a gate in a squeeze or small yard, stand to the side in case the gate is forced back suddenly. Never stand behind a gate.
- Introduce change gradually and calmly. Once you have moved cattle, give them time to adjust to the new environment, particularly if it is a tight space, such as a stall, squeeze, or chute.
- Avoid overfilling your crowd pens and tubs. Cattle flow better when they can turn and find an exit. Avoid overcrowding of pens and yards to reduce the risk of being trampled or stepped on.
- Train young and new workers thoroughly in all the tasks you expect them to do. Supervise them closely until you are sure they can work unsupervised.
- Never tie an animal to yourself or to a movable object.
- Never leave a tied or restrained animal unattended.

27 Cattle handling

28 Calving — Dehorning — Injections

Calving

- Make sure you always have an escape route when working in restricted areas, such as calving pens.
- Be aware of predator patterns in the area.
- If calving in a pen or interior stall, try to have the calf near a doorway or gate. Keep the calf between you and the heifer or cow.
- Avoid turning your back to the cow.
- Keep unsupervised children and animals away from the calving area.

Dehorning

- Use a securing device, such as a head gate, to hold the animal securely and protect the handler from injury.
- If a head gate is not available, make sure you have caught the animal well and properly roped it, and that it is adequately secured by a team of well-seasoned hands. If securing a roped animal to a post or other structure for this task, ensure the anchor point is suitable and that it is immovable. Do not allow the animal to move its head.
- Keep an eye on the worker doing the dehorning because it can be a highly physical activity.

Injections

Ranch owners or employers should be aware of the dangers of vaccines and other doctoring products being used on the ranch.

Ensure that workers are not allergic to the products, whether they are handling them or they are in the immediate area. Some people may suffer severe allergic reactions to certain injectables. Others may be more sensitive to some chemicals and might react with skin rashes or localized inflammation after absorbing chemicals through the skin.

Follow these guidelines:

- If you or any other workers are pregnant, avoid handling hormones used for synchronization — they can cause abortion in humans.
- Wash your hands thoroughly after handling any hormones used for synchronization.
- Use protective equipment as directed by the product label.
- Ensure that an antidote is available.

Accidental injections

- Make sure there is an emergency procedure in place for accidental worker injections.
- Make sure first aid supplies and personnel are available.
- If there is an accidental injection, wash the area with antiseptic soap and water immediately.
- If swelling or a reaction is occurring, elevate the body part and seek medical attention immediately. If necessary, call the poison control centre for instructions on how to deal with the problem.
- Have the MSDS or product label available to enable effective first aid and to ensure that medical personnel are aware of the product they are dealing with.

28 Calving — Dehorning — Injections

Ear tagging calves

- If the cow and calf are in a maternity pen, you might want to separate them temporarily.
- When possible, use a head gate/squeeze to tag grown cattle.
- For cattle that have calved outdoors on a pasture, the approach to the cow and calf may put the handler in a dangerous situation. Approach with caution — leave the calf between you and the cow.
- If tagging newborn calves, ensure your equipment is ready, hold the calf securely, and keep an eye on the mother cow.
- Work with a partner whenever possible in animal handling situations.
- Ensure you have a person-check system in effect when working alone around livestock. The higher the risk, the more frequently you must check in.

Tagging mature cattle

- Use an efficient holding area, chute, or holding gate system to isolate cattle for tagging. Don't assume that all head gates are sufficient restraint for ear tagging.
- Ensure the animal is securely held when using a rope or halter to immobilize the head. Sudden, violent head movements can result in injury, torn ears, and loose tags.

Consider using an ear-tag cutter for safer, more effective removal of tags.

Internal examinations

For internal examination on large animals, the handler needs to be close to the animal. There is a risk of injury if the animal suddenly turns or kicks. A good restraint is a must. Put the animal into a head gate and chute to hold it securely and prevent it from turning its hind quarters. A kick bar behind the animal's rear legs will help prevent injury to the handler.

29 Tagging — Internal examinations

30 Branding

Before using a branding iron, inspect it for damage or disrepair. For electric branding irons, inspect the electrical cord and plug for defects. For fire-heated irons, look for wear and cracking. If you find a problem with a branding iron, notify your supervisor and remove it from service.

Follow these guidelines when using branding irons:

- Use protective equipment and clothing (for example, boots, gloves, long pants, chaps or chinks, and effective head protection).
- Don't wear loose clothing or jewellery. Tie back long hair.
- Branding in wet weather will scald the animal and result in a superficial brand that won't last. Don't use electric branding irons in wet conditions — never while you or the animal are standing in mud or water.
- Always control the location of the iron to avoid accidental burns and fires. Set electric branding irons in the same place, known to all in the branding area. Return fire irons to the heating fire, stand, or pot when not in use.
- If there is an electric shock when using an electric branding iron, stop using it immediately.
- Have a first aid kit and fire extinguishers or fire suppression supplies available. Make sure everyone in the area knows how to use them.
- Fire at the site must be contained. There must be a suitable fire extinguishing method to extinguish the heat source effectively.
- Propane tanks must be checked and be within valid dates for use.

30 Branding

Basic guidelines

- Keep walking and work surfaces free of tripping and slipping hazards for animals and workers. Eliminate protrusions and sharp corners.
- Use even lighting in handling and housing facilities. Avoid bright spotlights or lighting fixtures that create shadows. These make movement more difficult and can spook cattle.
- Cattle have a tendency to move from dimly lit areas to more brightly lit areas, as long as the light does not hit them directly in the eyes. A well-lit ramp area will help keep the animals moving.
- Make sure factory designed and installed guards are in place on all squeezes and tilt tables. Equipment operators should be comfortable and competent using these devices.
- Ideally, loading ramps and handling chutes should have solid side walls to prevent animals from seeing outside distractions. Blocking vision also helps prevent escape attempts — it lowers stress levels and has a calming effect on the animals.
- Rubber bumpers on gates and squeeze chutes will reduce loud, abrupt noises, such as banging metal, and ease stress in livestock.
- Livestock tend to resist movement over drains, grates, hoses, puddles, shadows, or changes in floor textures or surfaces. Minimize these items to aid livestock flow.

Chutes

- When designing chute systems, consider including catwalks to enable working from above the cattle. This minimizes the need to enter a chute. Avoid entering or working in the chute.
- Chute entrances should have smooth-sliding restraining tailboards to keep the animals in place.
- Construction materials should have a smooth finish to avoid injury to the animals or the operator.
- A freestanding squeeze will allow workers to treat animals on either flank.
- At least one side of the squeeze should be designed to facilitate dismantling.
- Wear gloves when working around chutes.
- When handling cattle on foot, wear approved safety footwear.
- Avoid reaching into pinch points, moving gates, or areas when you could be crushed by the livestock.
- Use proper locks or stoppages on all crowding pens, squeezes, and chutes.
- If you must enter a chute to work with an animal, know your escape route. Choose an area that has interior footing, such as planks or rails, that you can use to escape.

31 Facilities and equipment

Collecting pens

Collecting pens should be large enough to hold the average number of animals in each group on the ranch. Always use caution when moving in the collecting pen.

Make sure pen gates swing open freely and have latching devices that are easy to secure. Know your escape route before entering any pen.

Crowding pens

Crowding pens lead from the collecting pen to the chute. Crowding pens should allow the cattle to turn and find the opening leading to the chute and then to the squeeze.

There are various systems that prevent the cattle from pushing back on the crowding pen gate, which reduces the possibility of the handler being struck by the gate. Ensure your restraining system is in good operating condition and that it can hold the push of the cattle.

Never enter the crowding pen. It is designed to be worked from the outside. Ensure the backstops are in good working order.

Don't overfill the crowding pen. A crowding pen should never be filled to over half of its capacity. Overfilling often results in cattle not being able to turn and find the "out."

Squeezes

Squeezes should:

- Allow most straightforward tasks to be carried out safely.
- Be secure and unable to be moved by the animal in the squeeze.
- Be positioned to allow you to work safely around them, without the risk of contact with other animals.
- Have good natural or artificial lighting.
- Have gates that open smoothly with a minimum of effort and noise. Regular maintenance will help.
- Have slip-resistant floors.

Head gates

A good head gate will hold animals firmly. It should be adjustable and easy to operate, both for holding and releasing animals.

The most common type of head gate has double gates meeting in the centre, with a strong quick-release device. Make sure the operator of the head gate knows how to use it effectively.

Avoid standing in front of head gates. The handler's position at the head gate is very important. If the handler is in the flight zone of cattle entering the squeeze, the animals will balk and not want to move forward.

Use a "man hide" partition at the head gate to help cattle flow by removing the "catcher" from the view of the oncoming cattle.

Ensure the visual flow of the chute to squeeze offers the cattle a route out as they move forward.

32 Facilities and equipment (cont'd)