



# CODE OF PRACTICE FOR THE TRANSPORTATION OF CATTLE IN WESTERN AUSTRALIA CATTLE TRANSPORTATION

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[NOTE: This Code is identical to that published by the Department of Local Government and Regional Development with minor typographical errors corrected.]

## PREFACE

The **Code of practice for the transportation of cattle in Western Australia** is based on the *Code of Practice for the Welfare of Animals – Cattle* produced by the Livestock Transporters Association of Western Australia (Inc.). The original *Welfare Code* was based on an extensive Australia-wide survey of all Codes of Practice and the technical and practical experience and knowledge of the Executive and members of the Association.

This Code has been prepared to assist all persons handling or transporting cattle in Western Australia, and reference to this Code is made in Regulations provided under Section 25 of the *Animal Welfare Act 2002* for the purposes of a defence against cruelty. It is not intended to be used for either audit or compliance purposes.

This Western Australian version of the Code is supported by the livestock industries and the Department of Agriculture. It is based on current knowledge and technology. It will be reviewed in the future on a needs basis, to take account of advances in the understanding of animal physiology and behaviour, technological changes in animal husbandry and their relationship to the welfare of animals.

For anyone using animals for scientific purposes, as defined in the *Animal Welfare Act 2002*, this Code should be read and used in conjunction with the 'scientific use code'.

Further copies of this Code are available from the Department of Local Government and Regional Development or from the Internet at:  
<http://www.dlgrd.wa.gov.au>.

## 1. INTRODUCTION

This Code of Practice is intended as a guide for people who are involved in transporting cattle. It emphasises the responsibilities of the owner of the cattle (or his/her agent), drivers and attendants. It is intended to encourage considerate treatment so that transport stress and injury are minimised at all stages of the transport operation.

For this Code, transport including the period immediately after mustering for loading including any waiting periods, loading, transit, rest periods and unloading at the point of destination.

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Cattle can be transported more effectively and with less stress if:

- care is taken in the selection of cattle prior to transportation;
- care is taken in the loading of cattle, using facilities well designed for cattle;
- well designed road transport facilities are used;
- the trip is scheduled to minimise delays in travel or at the point of disembarkation of the cattle.

Unnecessary transport of cattle should be avoided, however any transport that is required should be carried out in a way that minimises stress, pain and suffering.

Ignorance is no excuse for inappropriate handling of cattle. Employers have an obligation to make employees aware of the principles of humane handling, equipment use and livestock care.

The responsibilities of persons handling cattle during transport include an awareness of the provisions contained within this Code and the *Code of practice for cattle in Western Australia*.

## 2. RESPONSIBILITIES

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### 2.1

Cattle should be transported to their destination as quickly as possible within legal requirements.

### 2.2

The owner or manager is responsible for the cattle until they are on the transport vehicle. They then become the transporter's responsibility until they are unloaded. After delivery to an abattoir (including service abattoirs), management assumes responsibility until slaughter. When at saleyards, they are the responsibility of the manager, superintendent or supervisor of the saleyard complex. When at a second property, the owner/manager of that property is responsible unless other agreements over responsibility have been made.

### 2.3

Plans should be made to minimise any delay that could be stressful to cattle. The driver must ensure that he/she is provided with the name and telephone number of the owner/agent of the cattle and of the consignee.

### 2.4

Persons organising the transport of animals must be aware of any requirements for health certification and welfare of the animals and ensure that all legal approvals and documentation are completed before the planned journey.

### 2.5

Only animals fit to travel should be selected for transport. Those most susceptible to disease, stress or injury during transport should be loaded last and unloaded first.

## 2.6 Owner's responsibilities

2.6.1 The owner or agent has a responsibility to select only cattle fit for travel.

2.6.2 The nature and duration of the proposed journey should be considered when determining the degree of fitness required.

2.6.3 The owner or agent is responsible for the provision of well maintained loading facilities and the provision of competent stock people to load stock.

2.6.4 Provide contact names and phone numbers for owner, agent and person responsible at destination.

## 2.7 Driver's responsibilities

2.7.1 The driver of a road vehicle is responsible for the care and welfare of the cattle during transport unless an attendant appointed by the owner travels with the consignment. Drivers must stop and assist a distressed or injured animal immediately they become aware of a problem.

2.7.2 Drivers should be experienced to ensure the welfare of cattle in their charge and be familiar with the contents of this Code of Practice.

## 3. POLLUTION

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### 3.1

Truck exhaust systems must comply to E.P.A. and vehicle manufacturer's standards.

### 3.2

Transport trailer lower floor should be enclosed over road wheels to minimise water entry which causes extreme stress to animals during adverse weather conditions.

## 4. MINIMISING STRESS

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### 4.1

Stress is a cumulative response of an animal to its surroundings and may result in severe physiological effects. Animals of different breeds and ages may vary in their susceptibility to stress.

4.1.1 Cattle may be stressed during transport by effects of mustering, handling, holding, deprivation of food and water and extremes of weather.

4.1.2 Cattle should be mustered and handled in a way that maintains them in a condition suitable for transport.

4.1.3 The animals most severely affected by stress are those not accustomed to handling, those in poor condition, heavily pregnant females and young and old animals. It is essential that such groups be handled with due care.

- 4.1.4 The stress of transport will be greatly increased by extremes of weather.
- 4.1.5 Wherever possible cattle should be transported directly to their destination.

## 5. PRE-TRANSPORT PREPARATION OF CATTLE

### 5.1 Pre-travel rest period

- 5.1.1 A rest period after mustering and handling before transport is essential.
- 5.1.2 It is desirable to feed, water and rest cattle for 12 hours close to the loading facility if mustering has caused considerable physical exertion.
- 5.1.3 Cattle mustered from pastoral country by helicopter or light plane into unfamiliar conditions, e.g. exposed to an unaccustomed level of contact with man, dogs, motor vehicles, etc. must be provided with 24 hours of feed, water and rest before loading for transport.

### 5.2 Water and feed requirements

- 5.2.1 Deprivation of food and water will compound the stress associated with transportation. However, if hungry and thirsty cattle consume large amounts of water and/or feed immediately prior to trucking, then further stress may be caused.
- 5.2.2 Cattle should be offered water and feed before journeys expected to exceed 24 hours. Animals should not be offered food, but curfewed to water only, for the 12 hours prior to loading. If fed, dry roughage (not lush lucerne hay) at rates of 2-3 kg per adult animal should be used. Adult cattle require 45 litres (10 gallons) of water per head/day and double this amount in extremely hot weather.
- 5.2.3 Water troughs should be large enough and designed in such a way that cattle have easy access. Troughs should be firmly fixed so they cannot overturn. They should be kept clean and should be designed and maintained to prevent injuries.
- 5.2.4 Water and feed requirements during transport are specified in section 9.3.

### 5.3 Shelter

- 5.3.1 When cattle are in holding yards, use should be made of natural and artificial shelter to protect them from extremes of wind, heat or cold.
- 5.3.2 Shelter is important for young calves (especially those under 2 weeks of age) if they are left in yards for more than 2 hours before loading and transportation.

### 5.4 Special requirements

- 5.4.1 Where possible it is advisable not to transport cattle which are more than eight months pregnant. Where this is unavoidable they must not be transported for periods longer than eight hours due to the increased risk of metabolic disease and injury. They should be offered food and water upon arrival at the destination.
- 5.4.2 Cattle that have recently given birth should not be transported until at least four days after calving. In exceptional circumstances, it may be more humane to truck recently calved cows sooner than 4 days after calving.
- 5.4.3 Lactating dairy cows should be milked at intervals not exceeding 24 hours.
- 5.4.4 Cattle must not be restrained by their noses during transport.
- 5.4.5 Calves are especially susceptible to stress and care is required to ensure they are strong enough to withstand transportation. The following considerations apply especially to calves less than 2 weeks of age:
- they should be transported in vehicles with enclosed fronts to reduce wind chill in cold conditions;
  - they should be handled carefully in hot weather because of their susceptibility to heat stress;
  - they should be old enough so that the navel is dry and the umbilical cord at the junction with the skin is dry and wrinkled;
  - they should be fed within 6 hours of transportation and must not be left without food or water for more than 12 hours;
  - those being transported for slaughter should be taken to the nearest suitable abattoir with minimal travelling time.
- 5.4.6 Injured, weak or diseased animals may be transported on veterinary advice. Where veterinary advice is not readily available, the decision may be made by experienced personnel.

### 5.5 Cattle injured by bushfire

- 5.5.1 After bushfires, only those animals assessed by a veterinarian or livestock assessment team as capable of travelling without undue pain or stress resulting from burns, may be transported.
- 5.5.2 In the absence of a veterinary surgeon or livestock assessment team bushfire affected cattle should only be transported for agistment or slaughter if they meet all of the following criteria:
- they do not show severe respiratory distress;
  - they are able to walk;
  - they do not have burnt bare skin.

5.5.3 Cattle that show signs of obvious distress should be treated by a veterinarian or humanely destroyed without delay (refer to section 12).

## 5.6 Drought affected cattle

5.6.1 It is preferable that cattle should not be allowed to become so weak that they are not fit to travel. Animals that go down after limited exercise are not fit to travel. They should be fed until strong, or promptly and humanely destroyed.

5.6.2 Weakened cattle should be transported to their destination by the quickest, least stressful route. They should be given special protection against exposure to extremes of weather. They should not be mixed with stronger animals.

## 5.7 Handling cattle rejected from transport

5.7.1 Animals that are showing signs of obvious distress should be promptly and humanely destroyed. Methods for humanely destroying cattle are provided later in this Code (see section 12).

5.7.2 Humane and effective arrangements should be made by the owner or agent for the handling and care of any animal rejected as unsuitable for loading.

# 6. LOADING

## 6.1 Supervision

6.1.1 Persons responsible for the transport of cattle have legal responsibility for their care and welfare.

6.1.2 Injuries and stress are most likely to occur during loading and unloading where facilities and handling practices are unsatisfactory.

6.1.3 The loading procedure should be planned to allow adequate time for stock to be loaded quietly and without causing them injury.

6.1.4 Loading must be supervised by competent stock handlers who have a basic knowledge of the behavioural and physical needs of cattle.

6.1.5 Supervisors should ensure that spectators do not impede the smooth loading of animals. Unnecessary noise, harassment and force should be avoided.

## 6.2 Cleanliness

6.2.1 It is preferable that cattle should be loaded on to vehicles with dry floors or floors that have been cleaned before loading.

6.2.2 Appropriate construction methods should be used to prevent the soiling of animals on the lower deck of a double deck transporter.

## 6.3 Facilities

6.3.1 Cattle will tend to follow each other unless they are distracted and this behaviour should be exploited in the design of facilities:

- Sufficient area should be provided in forcing/receiving yards during loading and unloading to allow them to move freely in the desired direction.
- Movement can be helped by using curved races and fully covering the sides of ramps to provide visual barriers.
- Movement of cattle is also improved by providing clearly visible passage ways and gateways.
- Cattle will display defensive reflexes when confronted by visually contrasting surfaces such as shadows, grating and surfaces that are uneven or steeply sloping.

6.3.2 Loading should take place from a properly constructed ramp or loading bay suitable for cattle, or an appropriate portable facility where a permanent loading ramp is not available.

6.3.3 Yards should be constructed to avoid sudden changes in levels, dim and uneven lighting, narrow passages and sharp turns.

6.3.4 The forcing yard area needs to be sufficient to hold the transport pen size.

6.3.5 There should be no protrusions or sharp edges on the fences or gateways of the loading and handling facility that are likely to cause injury to animals. Hinges and latches must not project into the pathway of animals.

6.3.6 Gates should operate smoothly, retract fully from the pathway of animals and not be susceptible to jamming. Gates should also be made clearly visible to animals when shut by providing, where necessary, a "sight board" to improve visibility.

6.3.7 Ramps should be constructed so that they are appropriate to the transport being used. Ideally, there should be a flat platform at the top of the loading/unloading ramp, level with the deck being unloaded. This should not be less than 1.5 metres in length to aid the movement of animals.

6.3.8 Ramps and walking surfaces should minimise the risk of slipping by animals. Ideally ramp slopes should not be greater than one in five.

6.3.9 Solid extensions must be used to cover any gap between the loading ramp and the floor of the stock crate and must not move when in place.

## 6.4 Lighting

6.4.1 Artificial lighting is desirable for loading at night. Such lighting should be carefully positioned to give even light over ramps, races, yards and transport vehicles. Lighting should not cause deep shadows or bright spots in areas where animals move.

6.4.2 The stock crate of the vehicle may also have diffuse lighting to help cattle see where they are going.

## 6.5 Segregation during transport

6.5.1 It is preferable that the following classes of stock are segregated and transported in separate groups:

- horned cattle;
- hornless cattle;
- adult bulls;
- cattle greatly different in size (cows and calves may preferably be transported together under some circumstances);
- females in advanced pregnancy (note that cattle more than eight months pregnant should not be transported);
- weak should be segregated from strong cattle.

6.5.2 Cattle must not be mixed with other species during transport.

6.5.3 Working dogs must not be transported in the stock crate with cattle. Dogs should be transported out of sight of stock in a suitably designed and ventilated kennel elsewhere on the vehicle.

## 6.6 Assisting the loading of cattle

6.6.1 Cattle are difficult to move unless they can see somewhere to go. The use of force on animals that have little or no room to move is cruel and should not occur.

6.6.2 Electric prods should be powered only by battery and their use restricted to the amount necessary to complete the loading.

6.6.3 Manual lifting is permissible for young animals that may have difficulty negotiating a ramp.

6.6.4 'Flappers' (a length of cane with a short strap of leather or canvas attached) or 'metallic rattles' are ideal in that they encourage movement in response to sound. Sticks, lengths of plastic or metal piping, fencing wire or heavy leather belts must not be used to strike cattle. Canes or other materials used as an extension of the arm are a useful aid for handling cattle.

6.6.5 The use of well-trained dogs to help with the loading of cattle is acceptable. The number of dogs used should be the minimum necessary to complete the task.

## 7. TRANSPORT DESIGN

### 7.1 Construction and design

7.1.1 Vehicles and their fittings must be strong enough to contain the animal and prevent their escape. Design of crates must be such that cattle cannot jump out of the crate.

7.1.2 The parts of the vehicle or wagon through which cattle move or are held should be free from obstructions, projecting objects and hazards that could cause injury. Doors should be wide enough to allow easy exit and entry (no less than 900 mm).

7.1.3 The space between decks must be sufficient for the cattle, including horned cattle, to stand in a natural position without contacting overhead structures.

7.1.4 Materials used in the construction of transport vehicles must be able to be cleaned effectively.

7.1.5 Any internal sheeting of the sides of stock crates should be smooth to eliminate pressure points and reduce bruising.

7.1.6 The spacing of side rails where they are used, should be adequate to prevent the heads or legs of animals protruding.

7.1.7 Floor surfaces should provide a good foothold. The floor should be constructed from a non-slip material that will not injure the legs or hooves of animals.

7.1.8 Ideally, stock crates should include provision to load/unload animals directly from the upper deck.

7.1.9 Vehicles should be serviced and maintained regularly to minimise breakdowns. The crate should be maintained in good working order.

## 7.2 Ventilation

7.2.1 The exhaust system of a vehicle must not pollute the air inside the transport.

7.2.2 Sufficient gaps in the sides should be present to provide adequate air flow for the comfort of animals without over-exposing them in cold conditions.

## 8. LOADING DENSITY DURING TRANSPORT

### 8.1

The transporter, after consultation with the owner/agent, is responsible for ensuring that the loading density and penning arrangements are compatible with the welfare of the cattle and the capacity of the transport vehicle.

### 8.2

Loading cattle either too loosely or too tightly predisposes them to injury.

### 8.3

Traffic density in the areas where the trucks mostly operate should determine pen lengths; 3 m when mostly in heavy density traffic and 6.1 m in other areas.

## 8.4

The density of loading should be determined by the need to minimise injury but allow fallen animals to rise without assistance.

## 8.5

It is accepted that different types of transport vehicles are used across Australia and that the transportation system has evolved to suit the husbandry system in each area.

In extensively grazed areas the number of animals per load and the partitioning reflect these differences.

Other variables such as breed, traffic density, road conditions and travel in double deck transporters have a major effect either alone or in combination.

However, the welfare of the cattle must not be compromised and hence guidelines for each situation follow.

### Preferred loading rates for cattle of various liveweights

Mean liveweight (kg) of cattle	Floor area (m <sup>2</sup> /head)	No. of head per 12.2 deck	
		Bottom deck	Top deck
250	0.77	38	36
300	0.86	34	32
350	0.98	30	28
400	1.05	28	26
450	1.13	26	23
500	1.23	24	21
550	1.34	22	19
600	1.47	20	17
650	1.63	18	15

Equates to single deck trailer

## 8.6 When using these guidelines note

- Loading densities are determined according to the average liveweight, condition, size, shape and horn status of the cattle, as well as the prevailing conditions and the distance animals are to be transported. Loading rates must be assessed for each pen or division in the stock crate.
- 5% fewer cattle should be loaded if they are horned.
- When fewer cattle per pen than above are transported, they are more likely to be injured during emergencies and the use of firmly fixed portable partitions should be considered in these situations.
- When more cattle per pen than above are transported, fallen animals are unlikely to be able to regain their feet. The possible saving in freight from sending the extra animal, or animals, should be balanced against animal welfare considerations, potential product losses and mortalities.

## ATTACHMENT B

### ANIMAL WELFARE AND LOADING DENSITIES

Some key studies have been undertaken in Australia which demonstrate beyond doubt the view that livestock transporters have always had, that the loading density of livestock has a major impact on animal welfare.

The most conclusive study was conducted by Eldridge and Winfield in Victoria during 1987 to examine the optimal loading density of livestock using cattle with a mean liveweight of 400 kg and transported them over 300 km to an abattoir.

Three livestock loading densities were tested; namely:

- a low space allowance of 0.7 metres squared per animal;
- a medium space allowance of 1.16 metres squared per animal; and
- a high space allowance of 1.39 metres squared per animal.

The experiment was designed to control the variations in, amongst other things:

- season;
- weather;
- time of day;
- journey duration;
- husbandry skills displayed by drivers; stockyard personnel and transport equipment.

The level of bruising was assessed on the abattoir floor using the Australian bruise scoring system where a score of eight represents 1 kg. of trim.

It was found that cattle transported at the medium space allowance had little bruising, however bruising increased fourfold at the low space allowance and twofold at the high space allowance.

## 9. TRAVEL

### 9.1 General

9.1.1 Transport should be completed with minimal delays. Where delays cannot be avoided, feeding, watering, ventilation and protection from extreme weather must be addressed, and any such delay must be as short as possible.

9.1.2 Drivers should drive smoothly to prevent bruising and the risk of injury.

9.1.3 Animals which are distressed or injured should be given immediate assistance from the driver. Where necessary, veterinary, police, RSPCA or other authorised assistance should be sought as soon as possible to deal with severely distressed or injured animals.

## 9.2 Temperature

In very hot or cold conditions, minimise potential adverse influence by attention to the construction of the transport unit, its ventilation, the speed of travel, the number of planned stops as well as the number, age and condition of the animals to be carried, during planning of the journey.

## 9.3 Feeding and watering

9.3.1 All animals should have access to water every 24 hours unless the total transportation time can be completed within 36 hours. This includes holding, travelling, spelling or time spent in saleyards without water. Feed should be given every 48 hours.

9.3.2 Care should be taken to avoid deprivation of feed and water beyond the above specified periods when a journey is broken by unloading and spelling such as at a saleyard en route to an abattoir.

9.3.3 For calculation of total travel times for the purposes of feed and water requirements, transporters should be aware of the amount of time cattle have spent in holding yards without feed and/or water prior to loading and include this in their calculations.

## 9.4 In-transit Inspections

9.4.1 Consignments by road should be inspected within 30-60 minutes of commencing a journey and after that, at least every 2-3 hours as well as whenever the driver has a rest stop.

9.4.2 Every opportunity should be taken to inspect the animals during transport.

9.4.3 A suitable source of lighting should be available to carry out inspections at night.

## 10. REST PERIODS

### 10.1

Rest stops extend the total time of a journey. Unloading and loading cattle for rest stops and subjecting them to unfamiliar surroundings may impose a greater stress than continuing the journey for a limited period.

### 10.2

Cattle older than 1 month should have a rest period of 18-24 hours after each 36 hours of travel.

### 10.3

Calves under 1 month of age should have a rest period of between 12 and 24 hours after each 24 hours of travel when travelling with their mothers. Otherwise they must not be kept without food or water for more than 12 hours.

### 10.4

During every specified rest period, cattle must:

- be unloaded have access to water and/or food as appropriate for at least 12 hours followed by 6 hours off water and food;
- have enough space for exercise and rest.

## 11. UNLOADING

### 11.1

Similar requirements to those listed under 'Loading' apply to the unloading of cattle but note that cattle may be tired after a journey.

### 11.2

Cattle should be unloaded as soon as possible after arrival at the destination. Injuries will be reduced if stock are given the opportunity to walk quietly off the vehicle.

### 11.3

Sufficient pens should be available when unloading cattle to avoid mixing between unfamiliar animals which often causes fighting and extreme stress.

### 11.4 Responsibilities

11.4.1 The driver must bring to the attention of the person in charge at the destination, any aspect of the journey that might affect the future welfare of the animals. This includes the last feeding and watering times and full details of any treatment given.

11.4.2 Persons in charge of the consignment must notify and transfer responsibility for the stock to a suitable person at their destination. A system should be in place for unmanned delivery at such places as saleyards and abattoirs.

### 11.5 Access to feed and water

11.5.1 All cattle must be offered water as soon as possible after arrival at the destination. There is no justification for depriving cattle of water before slaughter.

11.5.2 When mature cattle have been without food for more than 24 hours and are to be held in yards for a further 24 hours or more, they should be provided with food.

### 11.6 Injured animals

11.6.1 There should be facilities for the humane unloading or slaughter of animals that are unable to walk off because of injury or exhaustion.

11.6.2 Severely injured animals must be humanely killed without delay. This should be done by, or at the direction of, the person in charge at the time if a veterinarian is unavailable. It is unacceptable to delay the humane destruction of severely injured animals.

- 11.6.3 Animals requiring emergency euthanasia should be shot or stunned and bled without moving them further than is necessary. This may be on the transport vehicle (stunned only).

## 12. EMERGENCY EUTHANASIA OF CATTLE

### 12.1

Previous sections of this Code have drawn attention to circumstances in which cattle may need to be humanely killed.

### 12.2

Where euthanasia is necessary, the person responsible for the animals must ensure it is carried out humanely and results in immediate death. If, and where necessary, assistance should be sought from a veterinary practitioner, authorised inspector or the police where necessary.

### 12.3

Euthanasia of animals is an unpleasant experience for most people and should be carried out with due consideration for any spectators who should be actively discouraged from viewing the destruction of injured animals.

### 12.4

The animal should be handled quietly to ensure it is not unnecessarily distressed or alarmed.

### 12.5 Use of firearms

The most efficient, safe and widely available method of humanely destroying cattle during transport is to shoot the animal through the brain at close range. Legal considerations regarding use of firearms must be observed.

#### 12.5.1 Safe Use of Firearms

- A .22 calibre rifle or a .32 calibre humane killer pistol is adequate for humane euthanasia of most cattle. However use of these calibre firearms must be followed by immediate bleeding out.
- Any use of firearms is potentially hazardous.
- Persons other than the person firing the weapon should be cleared from the area or should stand well behind the marksman.
- Never fire while the animal is moving its head. Wait patiently for the animal to be still before firing.
- To provide maximum impact and the least possibility of misdirection, the gun should be fired at a range that is as short as circumstances permit, but not in contact with the animal's head.

### 12.6 Use of captive-bolt pistol

- 12.6.1 When used with care this alternative is safer than use of a firearm.
- 12.6.2 The operator does not have to be an experienced marksman as the instrument's muzzle is firmly pressed against the skull before firing.
- 12.6.3 A captive-bolt pistol only stuns the animal and, to ensure death, it is necessary to bleed out the animal by severing the major blood vessels of the neck with a sharp knife when it collapses to the ground. To avoid injury due to the animal's involuntary movements, the operator should stand behind the neck.
- 12.6.4 Blank cartridges for the captive-bolt are colour coded according to the amount of charge they contain, and the manufacturer's recommendations should be followed on the most appropriate blank cartridges for different farm animals.
- 12.6.5 Regular maintenance of the captive-bolt pistol is essential for efficient stunning and avoidance of malfunctions.

#### Frontal method:

The captive-bolt pistol or firearm should be directed at the point of intersection of lines taken from the base of each ear to the opposite eye.

#### Temporal method:

This is only suitable for firearms. The animal is shot from the side so that the bullet enters the skull midway between the eye and the base of the ear on the same side of the head. The bullet should be directed square on to the side of the head.

Bleeding out of calves without pre-stunning is not acceptable because an additional blood supply to the brain enables the animal to remain conscious for a considerable time after the throat is cut.

Figure 1: Humane euthanasia of cattle



'a' Indicates recommended position for temporal method (suitable for firearms only).



'b' Indicates recommended position for frontal method (suitable for firearm or captive-bolt pistol).