

**Code of Recommendations
and Minimum Standards for the
Emergency Slaughter of Farm Livestock**

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Preface

The codes of recommendations and minimum standards for the welfare of animals have been prepared by the Animal Welfare Advisory Committee (AWAC), which was established in 1989 by the then Minister of Agriculture to advise him on matters concerning animal welfare.

AWAC consists of members from the following backgrounds: the farming community, animal welfare groups, the veterinary profession, animal behaviour and physiology, conservation and vertebrate pest control, consumer interests, animal welfare law and the Ministry of Agriculture. It also includes the chairman of the National Animal Ethics Advisory Committee and an independent chairman.

Extensive consultation takes place with industry and other interested groups in the development of codes.

This *Code of Recommendations and Minimum Standards for the Welfare of Emergency Slaughter of Farm Lifestock* was endorsed as a national code at the committee meeting held on 30 August 1996.

The codes of welfare which have been endorsed by AWAC are:

Code of Recommendations for the Welfare of Circus Animals and Information for Circus Operators

Code of Recommendations and Minimum Standards for the Sea Transport of Sheep from New Zealand

Code of Recommendations and Minimum Standards for the Welfare of Sheep

Code of Recommendations and Minimum Standards for the Welfare of Dairy Cattle

Code of Recommendations and Minimum Standards for the Welfare of Deer During the Removal of Antlers

Code of Recommendations and Minimum Standards for the Welfare of Animals Used in Rodeo Events

Code of Recommendations and Minimum Standards for the Welfare of Horses

Code of Recommendations and Minimum Standards for the Welfare of Bobby Calves

Code of Recommendations and Minimum Standards for the Care of Animals in Boarding Establishments

Code of Recommendations and Minimum Standards for the Welfare of Animals at the Time of Slaughter at Licensed and Approved Premises

Code of Recommendations and Minimum Standards for the Sale of Companion Animals

The Animals Protection Act 1960 and Its Implications for Those Responsible for Farm Animals

Code of Recommendations and Minimum Standards for the Welfare of Pigs

Code of Recommendations for the Welfare of Exhibit Animals and Information for Animal Exhibit Operators

Code of Recommendations for the Welfare of Animals Transported within New Zealand

Code of Recommendations and Minimum Standards for the Welfare of Animals at Saleyards

Code of Recommendations and Minimum Standards for the Care and Use of Animals for Scientific Purposes

Code of Recommendations and Minimum Standards for the Welfare of Layer Hens.

The codes of welfare may be revised to take into account changes in animal management practices and knowledge of animal welfare science.

1. Introduction

1.1 General

The routine slaughter of livestock at licensed and approved premises must be carried out in accordance with legislative requirements and in accordance with the relevant AWAC code. **Animals must be rendered instantaneously unconscious, and remain in such a state until death.** Death is usually produced by bleeding, and the slaughter can only be carried out by a properly trained person.

In cases of an emergency, it is often not possible to maintain these standards and yet it is in the interests of animal welfare to produce death as quickly as possible, to prevent or minimise suffering.

This code is designed to outline the methods of killing animals in emergencies which, although not conforming to those used in a commercial slaughter plant, will despatch an animal with minimum suffering and distress. **It is intended to serve as a guide to current best known practices, particularly in the absence of veterinary assistance.**

The principle to be employed for the emergency slaughter of animals is, at all times, to ensure that the process is as rapid as possible and is carried out after the animal has been rendered instantaneously insensible to pain. The code only covers the emergency slaughter of cattle, sheep, pigs, goats, deer and horses and does not address specifically the emergency killing of other species of animals or birds which may be farmed in New Zealand.

Livestock which are to be killed must be handled in such a manner that no unnecessary pain or suffering is imposed prior to the killing process taking place.

1.2 Definition of Terms

The interpretation of the words shall, must, and should is as follows;

Shall means there is a statutory requirement

Must indicates a minimum standard

Should means strongly recommended

Inspector is defined as any person appointed as an inspector in accordance with section 9 of the Animals Protection Act 1960, and includes every constable who, by virtue of their office, is deemed to be an inspector under that provision.

1.3 Legal Responsibilities and Inspectors' Powers

It is an offence, under the Animals Protection Act 1960, to allow animals to suffer unnecessary or unreasonable pain or distress. Furthermore, the Act states clearly that it is an offence to keep alive an animal which is in such a condition that it is cruel to keep it alive.

Inspectors appointed under the Animals Protection Act 1960 have certain powers to destroy and animal or cause it to be destroyed. The following three clauses are relevant to the operation of this code:

- The killing of an animal is not unlawful where the killing of the animal is carried out without infliction of unnecessary suffering. However, it is an offence to slaughter an animal in such a manner or position as to cause the animal unnecessary pain or suffering – *Animals Protection Act 1960, section 3 (f)*
- Where the owner is unknown or cannot be found within a reasonable time and an inspector finds an animal severely injured or sick and, in the inspector's opinion, the animal would not respond to treatment and it would be cruel to keep it alive, the inspector shall destroy the animal or cause it to be destroyed – *Animals Protection Act 1960, section 12 (3) (a)*
- If an owner is present and refuses to destroy the animal or consent to its destruction, a veterinarian is to be summonsed by the inspector forthwith and if the veterinarian certifies in writing that it is not possible to cure or heal the animal so that it may live without suffering the inspector shall destroy the animal or cause it to be destroyed - *Animals Protection Act 1960, section 12 (3) (b)*.

Inspectors are those appointed veterinary officers and livestock officers of the Ministry of Agriculture, certain warranted officers of the Royal New Zealand Society for the Prevention of Cruelty to Animals, and all police officers.

What an inspector considers are the criteria for deciding that an animal will not respond to treatment and that it would be cruel to keep it alive will depend on the circumstances of each case. Generally this power may be used for emergency euthanasia in the case of road accidents and other serious injury to animals while being transported.

In the case of chronic illness or serious injury, it would be normal practice for an inspector to obtain a veterinary opinion before taking any action.

In all cases though, where the owner is present and does not agree with the inspector's proposed action, an opinion of a veterinarian shall be obtained as quickly as is practical.

Note:

Persons using firearms for the emergency destruction of animals need to be aware of the provisions of the Arms Act 1983.

- A person shall not carry a firearm except for a lawful purpose. The burden of proving the existence of a lawful purpose rests with the person carrying the firearm – *Arms Act 1983, section 45*
- A firearm shall not be discharged in or near a dwelling house or in or near a public place so as to endanger property or to endanger, annoy or frighten any person – *Arms Act 1983, section 48*
- A bolt gun or a humane killer shall not be used, discharged or carried anywhere except for some lawful, proper and sufficient purpose. The burden of proving the existence of a lawful purpose rests with the person carrying the firearm – *Arms Act 1983, section 49*.

It follows that when discharging a firearm, for the purposes of emergency slaughter of an animal, great care needs to be taken to ensure that people and property are not endangered.

If circumstances allow and there is a means of communication readily available the Police should be advised prior to the firearm being discharged, or the Police should be advised as soon as possible after the event. (Use the number 0800 765 423 or 0800 POLICE).

While a firearms licence is mandatory for anyone using firearms, the Police recommend that a firearms licence also be obtained if a humane killer or captive bolt pistol is being used so that holders are aware of security and safe use of firearms.

If a firearm is being carried in a vehicle for the purposes of an occupation a letter of approval must be obtained from the local District Arms Officer of the Police.

Regulation 19 of the Arms Regulations 1992 provides that the holder of a firearm licence:

- shall not put a firearm in such a place that a young child has ready access to it
- takes reasonable steps to secure firearms away from ammunition and secured against theft
- keeps a humane killer in a locked container unless it is under the holder's immediate and personal supervision
- keeps firearms stored on the holder's premises in a lockable cabinet or container
- ensures that no firearm is left in a vehicle that is unattended.

The Police recommend that inspectors obtain formal training in the use of firearms on animals.

1.4 Situations Requiring Emergency Slaughter

The reasons for slaughtering an animal in an emergency are many and varied, and include the following:

- *Road accidents.* This may involve animals hit by vehicles resulting in painful and untreatable injuries
- *Injuries in transit.* Animals in transit may become injured during transport, and it may be necessary to kill an individual animal before it reaches its destination
- *Injuries in saleyards or in yards in a meat plant.* Animals may become severely injured in saleyards or other premises away from the farm, and need to be slaughtered immediately to prevent further suffering or distress
- *Injuries and disease on the farm.* Animals on the farm may be affected with a variety of conditions which are untreatable and require immediate slaughter. These can vary from severe traumatic injury to terminal illness and range from broken legs to untreatable problems related to giving birth
- *Neglect.* An inspector under the Animals Protection Act may be confronted with an animal which requires immediate destruction as provided for in that Act

- *In cases of National Emergency.* Faced with cases of suspected exotic or notifiable disease, it may be necessary to destroy all animals in a herd or flock. Although in such circumstances the slaughter of stock will be under official supervision, it will still need to conform with the recommendations of this code
- *Injuries at race meetings, Agricultural & Pastoral shows etc.* Animals may become injured during the course of activities at shows or race meetings, and need to be slaughtered immediately to prevent further suffering, pain or distress. Shielding the public from unpleasant scenes needs to be considered in these circumstances but should not contribute to delays in responding to the needs of the injured animal.

The overriding consideration in emergency slaughter is to prevent the animal suffering further pain or distress. Therefore, emergency slaughter should be undertaken in any circumstance where there is likely to be an unacceptable delay in treating the source of pain, where the source of pain is untreatable, or where transportation of the animal would perpetuate or aggravate the condition to a significant extent.

2. Principles of Emergency Slaughter of Livestock

The humane slaughter of animals depends on rapidly inducing a failure of brain function. Two procedures present themselves for this purpose:

2.1 Physical Destruction of the Brain

This method of slaughter involves direct destruction of the brain and its activity. This can be carried out using a concussive blow with an appropriate implement, or by shooting.

These procedures directly damage the vital centres of the brain and should cause immediate loss of consciousness. Generally, the damage to the brain following shooting is great enough to preclude recovery and in time (typically many minutes) leads to heart failure. However, this is not invariably the outcome, as it will depend on the position of the blow or shot, and the energy of the impact.

Steps must always be taken to ensure that there is no recovery and that death ensues rapidly following any stunning procedure.

Appropriate methods can include:

- throat cutting (see section 3.3)
- thoracic sticking (see section 3.3)
- pithing in cases where there has been penetration of the skull (inserting a rod through the hole and directing it into the spinal cord, so as to destroy the base of the brain and the upper spinal region).

2.1.1 Signs of Effective Stunning or Shooting

The concussive effects of stunning or shooting produce certain characteristic physical signs which can be used as a guide to evaluate the effectiveness of the procedure. Immediately following the blow or the shot, the animal should collapse followed by a period of intense

muscle contraction. This is usually referred to as the tonic phase of convulsions and lasts typically for up to 20 seconds. This period is followed by relaxation of the body and often some poorly coordinated kicking or paddling movements. The pupils of the eyes should be totally dilated.

Reflex responses produced by the brain (in contrast to spinal reflexes) are lost immediately following an effective blow or shot and do not appear before death. Most easily recognised is the loss of the breathing reflex; breathing should cease immediately following the blow or shot and not recover at any stage before the animal dies. This refers to persistent and rhythmic breathing, and not to occasional terminal gasps. The other brain reflex which can be used under these conditions is the corneal reflex, tested by touching the cornea of the eye in an attempt to elicit a blink response.

On the other hand, the presence of reflex activity should be viewed as evidence of sustained or recovering brain activity and should be dealt with by either a repeat shot, or by bleeding the animal.

Ineffective stunning can be recognised by the following signs:

- rhythmic breathing
- constricted pupils or corneal reflex (blinking in response to touching the eyeball)
- attempts to raise the head.

2.2 Stopping the Blood Supply to the Brain

This is done by cutting the major vessels in the neck, the carotid arteries and jugular veins (the throat cut).

Alternatively, the vessels arising from the heart, or the heart itself, can be cut (the thoracic stick technique); this is a skilled procedure and should be carried out only by experienced persons.

It is imperative that the process is carried out correctly. **Both carotid arteries, or the vessels from which they arise, must be severed.** For example, cutting only one carotid artery in the neck, rather than both, will increase the time to loss of brain function in sheep from 15 seconds to more than 60 seconds.

The time it takes for these bleeding procedures to produce unconsciousness is very short in most species; for example, sheep take around 3 seconds. In contrast, calves and cattle can take as long as 100 seconds. **It is for this reason that bleeding, by cutting the throat without prior stunning, should be used only as a last resort for species other than sheep.**

3. Methods of Killing

3.1 Blow to the Head

The use of a physical blow to the head must be of sufficient force to cause a depressed fracture of the skull. This will ensure the concussive effect of the blow is combined with physical damage to the brain.

Animals should be bled after a blow to the head to avoid any possibility of recovery.

The instruments for delivering the blow include:

- Sledgehammer, or back of an axe. These implements may be appropriate for cattle, pigs, male deer or horses
- Heavy hammer, iron bar or similar instrument. These instruments may be appropriate for calves, sheep, goats, female deer.

Significant skill and strength are required to ensure that the blow to the head is carried out effectively. Misadventures may arise due to movement of the head and, therefore, some form of firm but gentle restraint should be used.

3.2 Shooting

Three methods of shooting are available:

- shotgun
- rifle
- captive bolt pistol.

For all three methods, the site of the shot is critical. The appropriate site for the main livestock species is shown in the Appendix.

(Note: In all circumstances where a rifle or shotgun is used, the end of the barrel must not be placed directly on the head. It must be at least 10 cm away to avoid back pressure and possible rupture of the barrel).

If an animal is still mobile, steps must be taken to prevent escape if the shot is unsuccessful i.e. the animal should be restrained and/or confined if at all possible before the shot is attempted.

3.2.1 Shotgun

The conditions for the use of a 12 gauge shotgun are similar to those for the use of a rifle shot. The shot should be taken from as near to the animal as possible, whilst always ensuring a 10 cm gap between the muzzle of the gun and the animal.

The shotgun, ideally loaded with buckshot, is particularly recommended for very large pigs and here the recommended position is behind the ear and aiming towards the opposite eye. In all other animals, the position of the shot should be as described in the Appendix.

If possible, light gauge shot greater than 5 should be avoided. At all times, the heaviest gauge available should be used.

3.2.2 *Rifle shot*

A .22 gauge rifle, or larger, is appropriate for most farm animals.

There exists a significant danger of total penetration or ricochets when using a rifle shot.

Precautions must be taken to protect personnel and other stock.

The position of the shot should be as described in the Appendix. Avoid a high neck position or heart shot, if at all possible, as these are difficult to achieve consistently and do not result in an immediate loss of consciousness.

3.2.3 *Captive bolt pistol*

Because this method of stunning does not involve a free-flying projectile, it offers an important advantage for operator safety, while being at the same time highly effective.

Since the captive bolt pistol is used only for stunning before slaughter, investing in such equipment (approximately \$1000) is likely to be limited to people who will make frequent use of it. A second disadvantage is that the pistol needs to be in contact with the animal when it is fired, which means that the animal needs to be restrained to some degree. This can be difficult, unless the animal is already in an immobilised state. Maintenance of captive bolt pistols is of great importance to ensure effective functioning, particularly when they are used infrequently. Captive bolt pistols need to be cleaned properly after each day's use.

Captive bolt pistols should always be aimed in the manner described in the Appendix. The poll position, where the shot is aimed from the back of the head and towards the mouth, should only be used for horned sheep and goats. **Different cartridge strengths are available for different size stock, but stronger rather than weaker strengths should always be used.** Manufacturers of the equipment should indicate the appropriate strength of cartridge in their instructions for use of the equipment.

3.3 **Bleeding**

Although concussive methods should result in death, this does not always occur if the blow or shot does not destroy a vital centre in the brain. In such circumstances, this outcome should be assured by a throat cut or a thoracic stick. Bleeding should be initiated as soon as possible after the blow or shot.

In circumstances where stunning is not possible, bleeding alone can be used to kill animals in an emergency. A throat cut to a conscious animal can be expected to produce pain but in stock other than cattle and pigs it will be followed by loss of sensibility in less than 10 seconds. This relatively rapid onset of insensibility and death will often be an advantage in circumstances of severe distress. It is of paramount importance that the cut should be administered quickly and to a restrained animal.

Except in extreme circumstances species other than sheep should not be slaughtered by a throat cut only. The blood supply to the brain is markedly different in cattle, and to a lesser extent in pigs, compared with sheep, and this difference can result in prolonged consciousness in this species.

Before firm recommendations can be made in respect to cutting the throat of other livestock species further investigations are required. Until this is resolved a conservative approach should be adopted.

Bleeding should be carried out using a sharp knife at least 15 cm (6 inches) in length, so that the full incision can be made with one swift stroke. **Under no circumstances should the spinal cord be severed or broken.** This only produces paralysis and adds to the potential for distress, without any obvious benefits.

For a throat cut, the incision should be made at the top of the neck, behind the angle of the jaw and deep enough to cut both carotid arteries. Successful severance of these arteries, as opposed to the jugular veins which are closer to the surface of the neck, can be recognised by obvious pulsatile bleeding.

An alternative is to use a thoracic stick, which cuts the large artery near the heart from which the carotid arteries arise, or the heart itself. There is some skill involved in carrying out this procedure effectively and it should be used only by experienced persons.

4. Requirements for Emergency Slaughter

Persons at sites which routinely handle animals should at all times have the facility to carry out emergency slaughter should the need arise. This would apply in the following circumstances:

1. *On farm.* Most farmers are likely to be in possession of a firearm. This or some other means of slaughter, which preferably involves stunning before slaughter, should be available where large animals are being farmed.
2. *In transit.* Animals can become seriously injured during transport, and a procedure for emergency slaughter under these conditions should be documented. Personnel involved in the transport of animals should be trained to recognise an emergency situation and the appropriate responses to take. Suitable contact telephone numbers in different areas of the country to provide emergency slaughter should be available. For transit by sea, the captain should have suitable equipment available.
3. *Saleyards.* Saleyards must have the means of promptly carrying out emergency slaughter, preferably using prior stunning. Saleyards should have a documented procedure to respond to emergencies, and proficient named personnel to carry out emergency slaughter.
4. *Slaughtering facility.* All types of slaughtering facilities, including pet food premises, should have a documented procedure for carrying out emergency slaughter of stock which arrive in a disabled state or become injured or diseased while in the yards, holding paddocks or on company farms. **Means of carrying out emergency slaughter must be available outside normal working hours of the plant (weekends, holidays and nights). If no company staff are present during these times, or when the staff are limited to security personnel, it must be possible for someone delivering or overseeing stock to contact a suitable person easily in order to have the emergency slaughter carried out.**

During normal working hours, the MAF Meat Inspector or on-site Veterinary Officer can be contacted regarding any issue relating to emergency slaughter. **Means for disposing of carcasses of animals emergency slaughtered in transit to or on the site of slaughtering facilities must be available.**

5. *Shows and Race Meetings.* **Organisers of such events must have a contingency plan which will ensure that the emergency slaughter of animals can be arranged without undue delay.** Veterinarians and/or warranted officers from MAF or SPCA could be available for these occasions as part of the specified procedure to deal with emergency slaughter.

4.1 Bleeding

Bleeding Method	Comments
Neck cut	Stun first wherever possible Use a sharp knife, at least 6 inches long Ensure both carotid arteries are cut Do not break or sever the spinal cord
Thoracic stick	Stun first wherever possible Training in the procedure is necessary Appropriate for pigs and calves only when prior stunning cannot be carried out

4.2 Stunning and Shooting

Position and Method	Advantages	Disadvantage
<p>Captive bolt pistol</p> <ul style="list-style-type: none"> • As indicated in Appendix 	<ul style="list-style-type: none"> • Operator safety 	<ul style="list-style-type: none"> • Contact with the animal required • Some animal restraint required
<p>Rifle/shotgun</p> <ul style="list-style-type: none"> • As indicated in Appendix 	<ul style="list-style-type: none"> • Availability • Distance from the animal can be maintained 	<ul style="list-style-type: none"> • Safety concern from ricochet and total penetration
<p>Manual blow</p> <ul style="list-style-type: none"> • To same site as indicated in Appendix for Captive Bolt Stunning but always in front of poll 	<ul style="list-style-type: none"> • Availability of suitable instruments • Simplicity 	<ul style="list-style-type: none"> • Poorly controlled • Restraint needed

Appendix: Recommended Positions for Captive Bolt Stunning and/or for Destruction Using a Firearm

1. **Captive bolt pistols are held against the head** when fired, whereas **firearms must be held 10-25cm away from the head** when fired.
2. Normally, if an animal does not resume breathing following captive bolt stunning, it will die of its own accord. However, it is recommended that captive bolt stunning be followed by pithing or bleeding (throat cut or thoracic stick) to ensure the animal does die.
3. Only those with a current firearms licence should use a rifle or shotgun.
4. Great care must be taken to ensure that there is no danger to themselves, to other people, or to other animals.
5. The shooting position is particularly critical when low velocity and low calibre bullets or captive bolt guns are being used.
6. The selection of the captive bolt pistol and cartridge strength must be appropriate for the particular class of animal. The manufacturer's recommendations can be considered the minimum requirements, but the use of higher cartridge strengths would be appropriate for emergency slaughter.

Cattle

The shot should be aimed towards the brain at a point determined by the intersection of two imaginary lines each drawn from the inside corner of the eye to a point a little above and behind the opposite ear (or to the base of the opposite horn). In mature animals and bulls a site slightly to one side of the intersection should be chosen

Cattle must not be shot in the poll (back of head) position

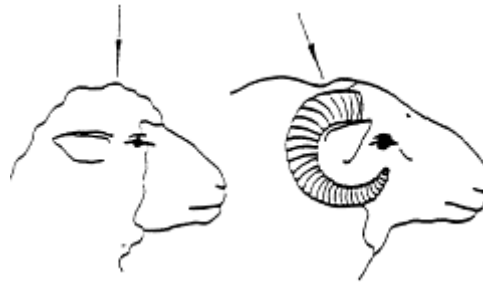


Sheep

For polled sheep the correct site is in the midline on the highest point of the head aiming straight down towards the angle of the jaw.

For horned sheep select a site in the middle just behind the bony ridge between the horns aiming towards the back of the throat. It is particularly important to bleed sheep promptly when using

this shooting position as they have been known to regain consciousness quickly.



Goats

Treat all goats as though they had horns and use the same approach as for horned sheep.



Deer

Note that antlers do NOT equate to the horns of cattle. The ideal site for bolt or bullet penetrations is in the middle of the forehead, at the crossing point of two imaginary lines drawn from the eyes to the tops of the opposite ears.

In stags this site is found between, sometimes just behind, the antlers.



Horses

The ideal site is slightly above (1cm) the intersection of two imaginary lines drawn from the eye to the opposite ear.



Pigs

Whereas most captive bolt pistols are suitable for small pigs, only high velocity captive bolt pistols should be used on large pigs.

For these larger pigs select a point determined by the intersection of two imaginary lines each drawn from the inside corner of the eye to the top of the base of the opposite ear. Aim slightly to one side at the centre of the forehead firing directly into the centre of the skull as indicated in the diagram. Restraining the pig using a noose around the upper jaw behind the canines facilitates this head shot as the pig pulls back on the restraining rope.

With very large pigs (choppers) a shotgun is most effective: use buckshot or heavy grade shot and aim behind the ear shooting through the head towards the opposite eye.



Site for
headshot.