

DISEASE ERADICATION

Humane Slaughter Team SOP for Killing of Different Species

Only members of the DAERA Veterinary Service Humane Slaughter Team (HST) should undertake shooting work. They are fully trained on welfare and safety aspects of killing. Firearm and ammunition used will be selected primarily for maximum destruction of tissue and secondarily for minimal risk of over penetration and ricochet.

Use of lethal injection must be by Veterinary Officers only.

Please refer to HST Risk Assessment [REDACTED]

Use of Derogation

In cases where an animal is dangerous and unapproachable or in such a state of suffering that its immediate destruction is necessary to relieve its suffering a derogation from the legislation will be used so that killing without prior stunning is employed.

This will normally involve either neck or heart/lung shooting. The former is used to incapacitate a very dangerous animal where even a heart /lung shot may not kill rapidly enough to render the situation safe. A heart/lung shot is a standard hunting practice whereby death is very rapid from profuse intrathoracic haemorrhage.

In cases of extreme suffering a veterinary surgeon may deem it preferable to kill without prior stun (where such stunning is not available) rather than postpone killing until a stunning system is available.

In the case of a neck shot that has not killed the animal a second fatal head shot will be used as soon as safely practicable.

Where such situations occur it will be recorded in a follow up report as a derogation and how suffering was minimised by whatever was employed to kill the animal.

SOP – include procedures for non-stun kills.

PROCEDURE AFTER SHOT:

All animals killed by shooting will be immediately assessed after shooting by the HST member involved. They are trained to check for signs of LIFE:

- *Pupillary dilatation* is one of the simplest and most reliable signs. If fatal, **pupil will be dilated and unresponsive to a bright light shone into the eye.**
- *Respiratory movement* – Respiratory movements may be seen due to agonal gasps (local nervous short circuits). These are irregular breaths and are clearly abnormal breathing. Agonal gasps and even air drawn into lungs due to leg thrashing may well aerate the lungs

sufficiently to keep heart beating for sometime. **Observation for 5 mins with no sign of regular rhythmic breathing during this time.**

- *Heart beat* – determined by using a stethoscope or by palpation of the chest. Again this may continue for sometime after death due to its own pacemaker. It becomes more irregular with time after death before **heartbeat stops**. During the period of observation after true death the heart beat will become more irregular, slow and then stop.
- *Pulse* – this can be palpated under the jawbone of a large animal or the tail – caution as may be too weak to feel. It is lost after the heart stops beating (see above). **Pulse should be lost.**
- **Corneal and palpebral reflexes are lost** immediately after death – the corneal reflex occurs when the eyeball is touched and the palpebral reflex occurs when the eyelids are stroked. (This will also occur after an effective stun but, in these cases, will return after 90 – 180 seconds.) **5 minutes after death the eye should remain open and the lid should not move.**
- **Glazing of eyes** – this will occur rapidly after death. The cornea loses its clear, moist appearance and becomes opaque, dry and somewhat wrinkled. This may not appear for 10-15 mins.
- **Rigor Mortis – Stiffening of the muscles** of the body occurs within 1-6 hours of death.

Where signs of death are uncertain a second shot may be used to ensure death. This is normally judged very quickly using the pupillary dilatation observation, using the laser sight or torch. If the pupil is not fixed wide open a second shot or alternative means of killing will be used immediately. HST members are trained that thrashing after a few seconds delay is normal after a killing shot to the brain and that persistent heart beat again is normal but should become irregular before stopping.

All shot animals should have at least two of the above parameters checked by the HST shooter. Checks should be repeated on each animal 10 minutes later. These checks should be recorded in the post action report to management.

SIGNS OF DEATH – IN BOLD GREEN, ABOVE. None of these signs alone, except rigor mortis, confirms death. **CONFIRM DEATH BEFORE LEAVING THE FARM.**

Killing of Cattle

Under most circumstances, cattle can be left in their normal housing, if safe to do so, or gathered into pens/covered silos and shot using suitable firearm and ammunition.

Frontal method/ Caudal skull method

The firearm should be directed at the point of intersection of lines taken from the base of each horn (or equivalent position in polled animals) to the opposite eye, aiming at the spine. Alternatively cattle may be shot just behind

the nuchal crest (transverse bony ridge across the back margin of the roof of the vertebrate skull) in the mid-line, aiming directly at the muzzle.

Temporal method

The animal is shot from the side so that the bullet enters the skull midway between the eye and the base of the ear. The bullet should be directed horizontally. This requires a greater accuracy than the above methods.

Small calves can be shot with .22 LR and larger cattle with .38/ .357/ shotgun.

Angled shots into the skull may occasionally be used if the above shots cannot be presented. Care must be taken to fully understand the anatomy of the skull and the line of bullet travel to penetrate the brain, using appropriate ammunition to achieve immediate kill.

Neck shots may be used where other shots cannot be safely taken.

Killing of Horses

Horses may be killed by shooting or I/V barbiturate. Shooting is preferable on both Health and Safety and Welfare grounds but owners' sensitivities should be respected. Before administering I/V barbiturate premedication with a sedative may be appropriate. Before shooting a horse a bucket of feed should be offered - they will frequently start to feed, keeping the head still for an accurate shot.

Shooting can be carried out using suitable .38/.357 ammunition or shotgun. The bullet should be directed to a point 2 cm above the intersection of 2 lines joining eye to contralateral ear; aiming from forehead towards neck. Temporal shots can also be used directing the bullet horizontally half way between eye and ear.

Angled shots into the skull may occasionally be used if the above shots cannot be presented. Care must be taken to fully understand the anatomy of the skull and the line of bullet travel to penetrate the brain, using appropriate ammunition to achieve immediate kill.

Neck shots may be used where other shots cannot be safely taken.

Killing of Sheep

The preferred method of destruction is by .22 LR rifle.

Hornless sheep

Aim on the midline, at point of intersection of two lines drawn from the eyes to the opposite ears, directed down the spine.

Alternatively, the weapon may be placed just behind the poll and aimed in the direction of the animal's muzzle.

Horned sheep

In these cases the weapon may be placed behind the poll and aimed in the direction of the animal's muzzle. Alternatively shoot at a point in the middle of an "X" joining eyes to contralateral horn – beware if horned sheep have large bony forehead.

- Rams: it may be easier to use .357 magnum or .38 rifle, depending on facilities and backstop.
- Newborn lambs: these should be separated from ewes and given sodium pentobarbitone (intracardiac, 3–5 ml through automatic syringes) or humane killers. Shoot the ewes first.

Angled shots into the skull may occasionally be used if the above shots cannot be presented. Care must be taken to fully understand the anatomy of the skull and the line of bullet travel to penetrate the brain, using appropriate ammunition to achieve immediate kill.

Killing of Pigs

Pigs are particularly difficult to kill. Calibres .38/.357 should be suitable for larger pigs. Prepare a suitable shooting pen. Sows with litters are particularly fractious and difficult to handle. Sows in crates with piglets should be shot first from above. Then the piglets may be killed by suitable method.

Use sodium pentobarbitone on unweaned pigs or humane killer. Intracardiac injections of a suitable product using automatic syringes are satisfactory.

Frontal method

The firearm should be directed at a point about midway across the forehead and, for adult pigs, about 2 cm above the level of the eyes.

Temporal method

The pig is shot from the side so that the bullet enters the skull at a point midway between the eye and the base of the ear. The bullet should be directed horizontally into the skull. This method runs a risk of over-penetration so a good backstop is essential.

Angled shots into the skull may occasionally be used if the above shots cannot be presented. Care must be taken to fully understand the anatomy of the skull and the line of bullet travel to penetrate the brain, using appropriate ammunition to achieve immediate kill.

Killing of Goats

Same as killing of horned sheep.

Killing of Captive Deer

1. A firearm should be directed at the forehead where lines taken from the base of each ear to the opposite eye intersect.
2. If the deer are disturbed when approached from the front, an equally effective method is to fire the bullet through the skull just behind the base of the antlers. The weapon should be aimed in line with the animal's muzzle.
3. If a reliable brain shot is not guaranteed then a chest or neck shot should be used.

Killing of Wildlife

Wildlife Cull:

1. Identify area of cull.
2. Consult with Environmental Heritage Service, Countryside and Wildlife Section, regarding numbers of animals in area.
3. Long-range i.e. escaped animals, feral animals or wild animals where approach closer than say 100 meters is difficult or impossible. In this situation a skilled marksman of at least the level of a deerstalker is absolutely essential.

Killing Methods

Using a Free Bullet Firearm (Rifles, Guns & Pistols)

- Ensure compliance with any firearm licensing requirements, including the use of trained and approved operators for rifles and guns.
- The following aspects of firearms safety should be considered:
- All firearms are potentially hazardous.
- When shooting at short range in yards, hollow/soft-point ammunition should be used. Full metal jacketed ammunition should be avoided where possible, because the projectiles can leave the target at high velocity, which is dangerous to personnel in the area. Hollow point ammunition disintegrates when entering the target, more effectively destroying brain tissue. When paddock shooting, use high velocity, hollow/soft-point ammunition.

- A suitable natural or created backstop must be used in all but the simplest close range culls eg very small numbers in close proximity and very quiet animals.
- Persons other than the shooters and assistants should be cleared from the area or should stand well behind the shooters. The line of fire must be chosen to prevent accidents or injury from stray bullets or ricochets.
- To provide maximum impact and the least possibility of misdirection, the range should be as short as circumstances permit.
- It is not safe to have the barrel in contact with the skull.
- Always consider notifying the police before using firearms.
- All guns should be carefully cleaned after every day of use, and before use if they have not been used for some time.
- All guns should be checked for sight zeroing shortly before use.
- In a disease outbreak situation there is a need to have access to a spare weapon in case of breakdown.

Advantages of using firearms

- Very humane as instantaneous so improved animal welfare
- Humane as the animal does not need to suffer close human proximity (a great source of stress for them)
- Much safer for the operator as close approach not required
- Can be done by non-veterinary staff unlike use of lethal injections
- Much less expensive using a bullet rather than a pharmaceutical
- Much quicker to cull large numbers than any other method
- Very adaptable and portable method requiring little or no transportation of live animals (which is a huge risk in infectious disease situations)

Features of a Killing Pen

- Ease of access for moving in livestock.,
- Ease of removal of carcasses.
- Suitable lining to provide backstop.
- Secure to prevent escape
- Safe for personnel
- Weatherproof (preferably).
- Easily cleansed and disinfected.

Using Injectable Agents

An overdose of any of the barbiturates can be used for euthanasia, ideally by the intravenous route in large animals; the intracardiac route may be preferable in smaller animals with or without premedication. Animals should be confined and handled with extreme care.

Specific euthanasia solutions are available (sodium pentobarbitone 325 mg/kg). This should not be used by the intrathoracic, subcutaneous or intramuscular route as at this concentration it is extremely irritant to tissues.

If the animals are excitable or vicious, other drugs can be administered to calm them. These drugs, such as tranquillizers, analgesics or depressants such as Xylazine or Azaperone etc. can be given by the subcutaneous or intramuscular route. An overdose of barbiturate can then be given intravenously to kill the animal.

These agents are restricted by law and must only be used by a veterinary surgeon or under veterinary supervision.

Using Tranquillisers & Sedatives

Tranquillisers and sedatives may be used to sedate fractious, nervous or awkward livestock.

Xylazine

Xylazine in a 2% solution is primarily a sedative with slight analgesic properties and is a muscle relaxant. Its action is based on the inhibition of the intraneural transmission of impulses. This is available in most veterinary offices (or may be purchased from PVP). As a dry substance it may be used in a dart gun in high concentrations.

A very useful diagrammatical guide is the Humane Killing of Livestock Using Firearms. Guidance Notes No. 3, 2nd Edition available from the Humane Slaughter Association.

HST Terms of Engagement

Version Number:	2
Version Date:	02/03/2026
Prepared and Issued by	HST

Version Control

No	Issued / Reviewed	Amendment	Reason for Change
1	02/03/2026	Cover sheet and version control added	Review
2	02/03/2026	Removal of CPED Programme Manager B McGarvey	Review
3	02/03/2026	Page 4 typo ("or" recorded twice)	Review
4	02/03/2026	Page 7 Removal of BG Contracts – insert contracted provider	Review
5	02/03/2026	Escalation and approval requirements added.	VPHP requests

Humane Slaughter Team

1. Management

Policy Manager: CPED Programme Manager

Operational Manager: [REDACTED]

2. Members

HST member	Branch/Dept	Grade	Member since	Responsibility (Delivery plus...)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

ENGAGEMENT

Remit of Team

1. Normal duty.
2. During an Epizootic Disease Outbreak.
3. Enforcement Team Support as required.
4. VPHP Support.
5. PSNI assistance.

1. Normal Duty.

HST may be activated to aid the enforcement of any of the legislative powers under which DAERA operate: e.g.:

- i. **Disease Control**
- ii. **Welfare**
- iii. **IRM**

There must be clear evidence and recording of the powers under which the team are working. This is the responsibility of all staff engaged in the management of an incident.

The requirement to engage HST may be due to a variety of factors e.g.

- the inaccessibility of the animal,
- difficulty in physically restraining the animal,
- economy,
- speed of action
- welfare considerations

Remote sedation or tranquillisation may also be required and may be provided by HST.

Contacting the team:

Any team member may be approached for advice if available.

A request for engagement of the team should be made through the Operational DVO or [REDACTED] in the first instance. If the action is straight-forward the most suitable team member will be sent to fulfil the action.

If the request is outside the normal parameters of operation it must be considered by a Grade 6 Programme Manager or Deputy Chief Veterinary Officer. [REDACTED] or [REDACTED] will escalate the decision making as appropriate. If HST managers unavailable, the Grade 6 or Deputy Chief Veterinary Officer over the programme activating the team should make the decision and relay the instruction in writing.

2. During an Epizootic Disease Outbreak.

HST team members will be activated through the LEDCC structures. The HST team will report to the SOC. They will liaise with the SOC to control the site while shooting is occurring.

3. Enforcement Team Support as required.

HST team members will be activated by request, as per normal procedures. They will liaise with the SOC/WEB site manager to control the site while shooting is occurring.

4. VPHP Support.

Engagement at abattoirs will be restricted primarily to assistance in the humane slaughter of an animal for welfare reasons where the FBO is declaring they do not have or are unsure of the capability of their own staff.

Engagement should not be in response to an emergency report of a dangerous animal however the team may be asked to provide exceptional support by management. The HST is not resourced to deliver services to respond urgently to reports of “Dangerous Animals”, and these reports must always be reported to the PSNI via 101 in the first instance.

HST team members will be activated through normal routes, with instruction coming from the Grade 6 or Deputy Chief Veterinary Officer as appropriate. HST may be activated through HST management when assistance is requested to shoot an animal which is impossible to stun by regular methods. The individual HST member should not be directed to attend by direct contact. The HST team/member will report to the OV on site. They will liaise with the OV and FBO to secure the site while shooting is occurring.

In these scenarios and in the absence of the PSNI, the HST will provide specialist and competent advice on ballistics and site safety, which will be considered as the primary instruction.

The final decision to engage in these scenarios should be provided by a DCVO in writing.

5. Enzootic Disease Control

HST may be used when TB branch need euthanasia and PME of single reactors from OTS farms. If these are unfit for abattoir HST may be involved in euthanasia and organising PME, see TB SI. This is at TB Programme expense.

6. Assistance TO the PSNI

As requested, in line with the MOU.

7. Use of TB reactors for training

Training branch have agreed to cover the costs of lifting up to 6 TB reactors by contracted provider and their keep until destruction, and disposal costs.

Humane Slaughter Team Risk Assessment

Original: June 2016

VERSION	DATE	NAME	Edit Details
1.1	27/06/2016		Initial
1.2	23/01/2017		ricochet
1.3	17.08.2018		Additional drugs, typos
1.4	18/10/2018		1 st aid and other means to mitigate risk of injury consequences. External assessment of team's competence.
1.5	04/01/2019		FAC holding requirement
1.6	19/08/2019		Further text added to "Discharging gun at unintended target" section.
1.7	21/11/2019		Injury to eyes and ears updated
1.8	17/04/2024		Use of revolver
1.9	05/11/2025		Poultry depopulation

Activity	Hazard	Risk	At Risk	Control
Working with Animals	Humane slaughter-euthanasing drugs	MED	All	- All POM medicines to be used by Veterinary Surgeon ONLY except if being delivered by dart and then should be under supervision of a veterinary surgeon. - Firearms and dart guns to be used by members of the VS Humane Slaughter Team ONLY. Field Veterinary Surgeon's will control use of tranquillisers and oversee their delivery via dart. Veterinary Surgeon responsible to ensure used dart is disposed of safely afterwards. Trained HST non vets can use dart gun/blowpipes for delivery of tranquillisers. - See also VS COSHH Manual for assessments for Immobilon (etorphine), Domitor (medetomidine), Rompun (xylazine) Domosedan or equivalent (detomidine) and pentobarbitone. Immobilon very unlikely to be used. Requires approval of HST team leader before use. Minimum 2 Veterinary Surgeon's specifically trained in IV access on site for use of Immobilon.
Culling animals with firearms	Misfire	MED	All	Do not open chamber for 30 secs and keep pointing in safe direction. Then open chamber and remove round. If it has discharged already note that bullet may be lodged in barrel and this is a very dangerous situation. Gun must not be used again until barrel is cleared. If round has not fired store safely and return to dealer where bought.
	Firing gun with barrel blockage	MED	All	This can occur where wrong ammunition is put into a gun (e.g. a 20 cartridge into a 12 g shotgun). Also snow, mud and other contaminants can block from the muzzle end. A misfire can leave a round stuck in a barrel. ALWAYS CHECK FOR A CLEAR BARREL BEFORE INSERTING BOLT AND LOADING AMMUNITION.
	Negligent discharge	MED	All	(Negligent discharge is where a firearm is discharged unintentionally but where the person handling the firearm has contributed to the discharge by failing to follow cardinal safety rules.). Only load gun at the point of commencing cull and once everyone is aware that cull is about to commence. Finger must be outside trigger

				guard until animal is in sight picture and you are ready to shoot safely. Where semi-automatic guns are being used finger should be positioned outside trigger guard between shots. A procedure for dealing with negligent discharge and other unsafe incidents has been produced by HST management. See [REDACTED]
	Discharging gun at unintended target	MED	All	Only full HST members to handle firearms in line of DAERA duties unless under direct supervision of HST management. Firearms to be treated as if loaded at all times. Muzzle should never point toward any person. When handing gun to other person, when receiving gun, when removing from storage or cover and when replacing gun into storage/cover gun must be proved clear. During a cull, particularly where staff are working in fields/undergrowth, Hi Viz clothing should be considered so that all persons are clearly seen.
	Discharging revolver at unintended target	MED	All	The revolver is a short barrelled firearm and the inherent risk with its short length is the ease of turning its muzzle in an unsafe direction. Be extra vigilant when using it, as to muzzle direction.
	Unsafe working by team member	LOW	All	Regular training. Supervised by qualified Firearms Instructor (Team Leader) and regular assessment by independent verifiers eg PSNI Firearms Instructors.
	Contracting disease	LOW	All	PPE to be worn. Where respiratory risk is present face masks must be worn. If an animal is deemed a TSE risk, consideration must be given to alternative means of killing it (if fractious a neck shot may be employed for example). PRUs to be worn where CPED H&S assessment requires it.
	Injury due to using a cull pen	LOW	All	Cull pens are employed to keep animals under control and within very confined space to make shooting them both safe and humane. At times shooting from a raised platform will be preferred by those advising re building the pen. In this case it will involve working at a height with associated risks.

				Cull pens are normally lined with bullet absorbing backstop but on occasion this may be deemed unnecessary as in the case of a small pen and quiet animals. Awareness of ricochet risk then.
	Injury not being addressed speedily	LOW	All	First aid training up to date. First aid kit and specialised components (chest drain, field dressing, Chitogauze) available at the cull site. Awareness of phone network availability. Lone working not allowed.
	Injury to eyes/ears	MED	All	- Firearm reports are always a risk to hearing so approved hearing protection must always be worn in the vicinity of shooting whether the at risk person is shooting or not. - Eye protection should usually be worn but in certain situations with certain firearms risk is low enough to allow this not to be worn. These circumstances will be taught in training. - In addition to wearing 3M Peltor ear defenders, the ear nearest the gun butt should have an additional ear plug inserted just in case the gun butt lifts the cup of the ear defender inadvertently while shooting. (This is most likely where iron sights are used as the head is lowered to the greatest extent shooting this way.) Having one ear unplugged will allow the sound enhancement to work.
	Exposure to lead	LOW	All	Most ammunition is lead based and therefore handling ammunition as well as shooting it carries a risk. Persons should always wash hands after handling ammunition and not eat, drink or smoke during shooting without first cleaning hands.
Culling animals with firearm	Ricochet	MED	All	- For large numbers in a cull a safe backstop must be in place. This may be soft ground or firm old deep bedding. Or it may be created using bales of hay or silage. - Only if 1 or 2 animals are being culled and the proximity of the shooter and movement of the animal allows; a backstop may be not used. - Where neither above apply either shot shells or frangible ammunition must be used.

				Assessment of litter, surrounding walls, external geography of site and site security to be considered in relation to the ammunition being used and the species being culled.
	Ricochet	MED	All	At the “location” kill pen; there is now plywood lining just over 1 wall. All shots must be directed at the animal target with this lining behind. It is 25 mm plywood mounted on 2 “ batons attached to block wall. It is designed to absorb any round (up to 357 magnum SP) that either misses target or exits target due to over penetration. (This has been extensively trialled in the field and at CIFEx. The round can pass through the plywood but disintegrates on the wall and fragments cannot penetrate the plywood to escape to the outside).
	Angry person encounter	MED	All	This is a not uncommon risk and has potentially serious consequences. Good planning is important so that those handling firearms are never likely to have direct encounter with angry persons. PSNI should be consulted where even the least risk is anticipated. If encountered it is best to leave the scene unloading the firearm as you walk away and do not engage with the angry person. As soon as possible lock the unloaded firearm in your vehicle or preferably leave the scene in your vehicle with the unloaded firearm with you.
Depop poultry	Small mobile targets	MED	All	Ensure accurate shot in correct direction every time. Awareness and coordination with partners essential. Communicate regularly to coordinate actions.
	Tiredness, repetitive strain on operator and equipment	MED	ALL	Regular rests. Check if weapon overheating and rest until cooled. Regular stretching or flexing of joints to avoid overuse aches.
Culling animals with firearm	Negative feelings during after culling	MED	All shooters	This may be a form of PTSD and must be anticipated by HST management. Open conversations about feelings to be encouraged. Current HST team is cognisant of these problems and have dealt with them in the past.

Culling animals with firearm	Team member with health or other concerning issue making them unsuitable for firearms use	MED	All	Each team member is required to hold a Firearms Certificate issued by the PSNI which means that the PSNI have background checked them to a suitable standard.
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