

## **Annex G:**

### **Draft Best Practice Guidance:**

### **Controlled shooting in the field, and cage-trapping & despatch of badgers, under licence to prevent the spread of bTB in cattle**

**July 2011**

Please Note: This is a working draft of guidance, which will be revised and issued if a policy of badger control is adopted.

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## Draft Best Practice Guidance: Controlled Shooting

Relating to	Licences granted under the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981.
Date of guidance	July 2011
Valid in	England
Who for	Persons authorised to kill or take badgers by a specific licence under the Protection of Badgers Act 1992 <sup>1</sup> and acting in accordance with that licence and the relevant Wildlife and Countryside Act Class Licence
Relevant Class Licence	WML-CL05 Use of artificial light for shooting badgers at night

### Overview of guidance

This Best Practice Guidance describes best practice for the controlled shooting of badgers in the field and the associated use of artificial light (e.g. lamping). Compliance with this guidance will normally be a condition of a licence issued for the killing of badgers by this means to prevent the spread of bovine TB. Actions described in this guidance may only be undertaken where a specific licence under the Protection of Badgers Act 1992 authorising the killing of badgers has been issued AND in accordance with Class Licence WML-CL05 covering these methods. This guidance does NOT confer any authority to undertake the actions described. Those acting under licence must ensure that all licence conditions are complied with and must take all reasonable steps to ensure that the licensed operations are carried out safely and humanely. This document does not cover planning and carrying out an effective badger control operation over the whole of a (proposed) licence area; this should be dealt with in the application Badger Control Plan.

### Legal protection for badgers

Badgers and their setts are protected under the Protection of Badgers Act 1992 (POBA) and certain methods of killing or taking them, including the use of artificial light or any device for illuminating a target (e.g. a spotlight), or sighting devices for night shooting and certain use of vehicles are prohibited under the Wildlife and Countryside Act 1981(WCA) . As well as a licence under the Protection of Badgers Act, shooting using any of the above methods must be carried out in compliance with the conditions of the relevant 'prohibited methods' Class Licence ( WML-CL05) issued by Natural England under the Wildlife and Countryside Act 1981.

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<sup>1</sup> Where the conditions of a licence granted under the Protection of Badgers Act 1992 or Wildlife and Countryside Act 1981 to kill or take badgers are at variance with the guidance presented in this document then the conditions of that licence take precedence.

A person guilty of an offence under the Protection of Badgers Act 1992 or the Wildlife and Countryside Act 1981 may be liable on summary conviction to imprisonment or a fine, or both.

## Humaneness Standards

Controlled shooting is considered to be a humane method for culling badgers. This culling method is permitted for use under licence in the Protection of Badgers Act 1992. To ensure a high level of humaneness licence holders must ensure that all reasonable measures are taken to ensure this method is applied to a high standard. These measures include the adherence to these best practice guidelines, meeting the required competence and complying with licence conditions and monitoring.

Operators must never feel rushed into taking a shot. The key consideration is for an accurate and humane shot.

## Requirements and Constraints

### Competence

Licence holders must take all reasonable precautions to avoid wounding badgers and must have full regard for safety considerations. The circumstances in which the use of shotguns is appropriate in this context is restricted because of their limited power and range. The level of competence in rifle marksmanship required in this context is considered to be equivalent to that for the Deer Stalking Certificate Level 1 qualification. **Anyone carrying out the actual shooting of badgers under licence (rather than just assisting e.g. by holding a spotlight) will be required to demonstrate an appropriate level of marksmanship, through appropriate training. In addition, all persons shooting badgers under licence must have received Defra approved training on the humane shooting of badgers.**

### Weapons and Ammunition

Badgers must only be shot within the terms of an appropriate licence using firearms and ammunition that comply with the Protection of Badgers Act 1992.

The type of firearm/ammunition permitted under licence is likely to be limited to the following:

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- Rifles: a minimum of .22 centre-fire calibre, with minimum bullet weight of 50 grains and minimum muzzle energy of 1000 footpounds.
- Shotguns: 12 bore only, using a cartridge loaded with BB or AAA shot.

Note, the provisions of the Act potentially allow the use of some .22 rim-fire cartridges or .22 rim-fire magnum, but these are not considered powerful enough to ensure a humane kill and will not be licensed. In addition, because of the limited power and range of shotguns, they are only likely to be permitted for shooting at very close range – no more than 20 metres maximum – when shooting over a bait point from a fixed shooting position, such as a high seat.

The use of an automatic or semi-automatic weapon (i.e. one with a magazine capable of holding more than two rounds (cartridges/bullets)) is prohibited under the Wildlife and Countryside Act 1981 and will not ordinarily be licensed for culling of badgers. The use of artificial light in the course of shooting badgers at night must comply with the relevant Class Licence issued by Natural England.

Use of sound moderators does not need a licence under the Wildlife and Countryside Act 1981 or Protection of Badgers Act 1991, but their use with Section 1 firearms ( e.g. centre-fire rifles) must be covered by the user's Firearms Certificate [S.1 Firearms Act 1968].

### **Firearms and Shotgun Certificates**

A person shooting badgers under licence must be in possession of a current Shotgun or Firearms Certificate (appropriate to the weapon he or she is using) and have authority to shoot on the land where the shooting is taking place. In the case of Firearms Certificates, these must recognise specifically that badgers are to be shot or include wording that the Police have confirmed to Natural England includes the shooting of badgers (for example, badgers are not considered to be covered by the term "vermin"). Applications for the necessary amendment to Firearms Certificates must be made to the Police and they may require to see a copy of the relevant Protection of Badgers Act licence before making such an amendment. Any queries on firearms should be directed to the local Police Firearms Enquiry Officer in the first instance. The Police may wish to inspect the land involved.



## **Use of dogs above ground**

The wilful taking or killing of badgers (or attempting to kill or take) by any method is prohibited under the Protection of Badgers Act 1992, unless in accordance with a licence. The use of dogs to hunt uninjured badgers is considered to be part of 'wilful taking/killing', so prohibited, and will not be licensed. It is also prohibited by the Hunting Act 2004, unless within one of the Act's (limited) exemptions.

The use of a trained dog to follow a scent trail, with the aim of locating (without physically coming into contact with) an injured badger, does not require a licence and can be carried out under an exemption provided in the Hunting Act 2004. Any dog used in this way should be kept under close control on a leash when following a trail and, if shooting from or near a vehicle, should be kept in the vehicle unless actually being used to locate an injured badger. Normally only a single dog should be used for this purpose (the exemption under the Hunting Act does not permit the use of more than two dogs. Use of a dog-muzzle should be considered).

## **Use of dogs below ground**

Dogs must not be used in flushing or driving badgers from setts. Unless licensed, causing a dog to enter a badger sett is an offence. There is a presumption against licensing dogs to enter setts, it is therefore highly unlikely to be licensed to prevent the spread of bTB.

## **Sett Interference:**

The Protection of Badgers Act 1992 prohibits interference with a badger sett. A licence to take or kill badgers, unless specified in the licence, does not permit interference with a badger sett. The Protection of Badgers Act defines a badger sett as "any structure or place which displays signs indicating current use by a badger". Interference includes damaging a badger sett or any part of it, destroying a sett, obstructing access to a sett, causing a dog to enter a sett, or disturbing a badger when it is occupying a sett.

The placing of small twigs or straw in sett entrances in order to record animals passing in or out of the sett can be a useful technique for monitoring sett activity. As long as the materials are lightly placed, and do not obstruct the access of badgers to or from the sett, this does not require a licence. In addition, a small amount of sand can be placed on the ground at the sett entrance to detect paw prints, assuming suitable weather conditions (heavy rain can wash the prints/sand away, very dry sand does not hold the print shape).

## **Licensed Persons**

A licence under the Protection of Badgers Act to kill or take a badger permits only the person(s) named on the licence to carry out the authorised actions or, in the case of a company, an officer or employee of the company; the work cannot be delegated to a third party. Companies can act only through their agents, i.e. employees or officers. Persons carrying out actions solely to assist those doing the actual killing/ taking, such as operating a spotlight in the course of night shooting but not actually shooting, will need to be covered by a Wildlife and Countryside Act licence (prohibited method) but not a Protection of Badgers Act licence, providing the person they are assisting is acting lawfully under a POBA licence.

When applying for licences, consideration needs to be given to which person(s) will be carrying out each activity.

A minimum of 2 people should be involved in night shooting for health and safety reasons and, if using a spotlight, so that one can operate the spotlight leaving the other free to concentrate on shooting and the safe handling of the firearm.

## **Planning**

### **Police liaison**

Prior to any control operations it is advisable to inform the local police of dates, times and areas where control will take place. Different police areas may require different information so it is important to check exactly what information is expected. The local police office should be the first port of call.

### **Public safety**

The advance planning and conduct of badger control must take full account of the need to avoid risks to public safety.

### **Shooting strategy**

Shooting must be carried out only as part of a coordinated strategy. More information on this is provided in the Badger Control Plan guidance note. The aim of the control in the first year/season of the licence must be to reduce badger densities (numbers per area) significantly over a short period of time (6 weeks). Culling in subsequent years of the licence must also be

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carried out over a short period each year (6 weeks) and must aim to keep badger densities at the appropriate level for the duration of the licence, without causing local disappearance. This should be planned for when deciding the number of shooters needed and the personnel to assist them. For safety reasons shooters will need to be in close communication so they know where each is operating at any given time.

If shooting is to be used as a primary culling method to significantly reduce the badger population over a specific time period, then thought must be given to when this will be possible. For instance it may be that crop/vegetation height in the summer months will limit shooting opportunities to such an extent that achieving a significant population reduction in the time period (6 weeks) is unlikely at that time of year. If so either alternative control by cage-trapping should be considered or the controlled shooting of badgers in the field should be planned for another time of year (but not during the close-season).

As well as planning how the work will be carried out if all goes as anticipated, planning must include contingency plans to mitigate the effects of events which may confound the work, for example bad weather, interference from people opposed to culling, lower than expected numbers of badgers being shot and key people being ill/unavailable.

## Shooting

**The aim is to ensure that the target animal (badger) is killed humanely and that the technique is safe for the operators, the public and any non-target animals in the vicinity e.g. livestock.**

## Badgers' senses

Badgers' main sense is smell and hearing is also important, so the wind direction relative to the badger and shooter will need to be considered. Sight is less important, especially at the times of day when many badgers will be encountered (i.e dusk/dawn/night), but movement is readily detected and silhouettes against a skyline are likely to stand out.

## Seasons

**No controlled shooting will be permitted from 1<sup>st</sup> February to 31<sup>st</sup> May, inclusive.** This is to avoid the possibility of leaving dependent cubs underground to starve as a result of nursing

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females being culled. However, even periods during which culling is permitted, where an operator has reason to suspect that an animal may be a lactating sow with dependent cubs, then the animal must not be shot.

### **Shooting methods**

Two main methods of shooting are likely to be employed; searching over an area with a spotlight and rifle, where animals may be encountered at various locations and at varying ranges, and shooting over a fixed bait point with a shotgun or a rifle. In practice operators may choose to combine these methods to a greater or lesser extent. Shotguns must only be used when shooting over a fixed bait point at close range (see below).

### **Shooting with the aid of an artificial light/ lamp/ spotlight**

Shooting at night with the aid of a visible light requires a team of two or three people; the shooter, a spotlight operator, and potentially a third person to drive the vehicle, if used, and to act as an additional safety 'lookout'. Persons solely assisting the person shooting, e.g. by using a spotlight to illuminate the target, need to be covered by an appropriate Wildlife & Countryside Act licence, but not a Protection of Badgers Act licence, as long as the person they are assisting is covered by an appropriate Protection of Badgers Act licence and is acting lawfully.

### **Use of a mechanically propelled vehicle** (e.g. quad bike, pick-up etc)

The use of a vehicle as transport to, or around, a site does not need a licence. However, the use of a mechanically propelled vehicle in immediate pursuit of a badger is prohibited under the Wildlife & Countryside Act. 'Immediate pursuit' is not defined in the Act but NE/Defra take the view that using a vehicle to help search for badgers or as a stationary shooting platform would not need a licence.

### **Use of artificial light**

There are inherent difficulties in shooting badgers from a distance, particularly since the animals are largely nocturnal and shooting is likely to be carried out in limited light conditions at dusk or at night. This is likely to mean that most shooting will need to be carried out using a spotlight. The person shooting must be able to accurately identify the target and confidently locate the heart-lung target area on the badger's body. **Identification of a target by eye-shine alone is**

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**not acceptable.** The shooter must have a clear view, so as to make a clean and lethal shot, and be certain of the safety of taking the shot. Coloured filters (e.g. red) are available to modify spotlights and may reduce a target animal's awareness, and so allow a closer approach or more time to take a shot, but they also reduce the amount of light visible to the shooter.

Image intensifying ('night sights') or infra-red sighting devices used as sights on a rifle are prohibited under the Wildlife and Countryside Act and there is a presumption against them being licensed for this type of shooting because of safety considerations. An image intensifier may be useful, however, for scanning and spotting animals prior to shooting with a lamp, to reduce the disturbance from use of the spotlight. Searching for badgers with night-sights immediately prior to attempting to or actually killing them is likely to need a licence.

### Site Selection

Since shooting will normally occur at dusk or at night, the shooting team must be familiar with the terrain, having made visits during daylight hours to study the area, to carry out a risk assessment, and to identify safe and unsafe shooting locations. Shooting must take place only on land covered by the licence. Care must be taken, in selecting sites for shooting, to avoid any risk to non-target species including domestic animals and livestock, and to avoid shooting if there is any risk of accidental injury to humans e.g. near rights of ways, near boundaries with third parties, on the edge of villages and near to rural dwellings. An obvious place to select is in the vicinity of a sett, where emergence may be at predictable times, but badgers should not be shot too close to sett entrances. The shooter must ensure that any badger to be shot is far enough away from a sett entrance, or other cover, to allow for a follow-up shot in the event of the animal not having been killed by the first shot, so avoiding any opportunity for a wounded badger to retreat back into the sett. **For this reason badgers must only be shot when they are at least 30m away from the nearest sett.** To reduce this risk, animals may be attracted to areas clear of vegetation away from sett entrances using suitable bait (see 'Shooting at bait points' – below).

The shooter must be certain of a safe backstop and ensure the absence of any person or animal which might sustain injury should the bullet/shot miss, pass through the target animal, or ricochet. A stationary vehicle may make an appropriate 'hide' or raised platform.

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Badgers may be encountered, away from the sett, feeding in or crossing fields, but shooting in such circumstances must be limited to where there are no concerns over safety and where the shooter is confident of a clean and lethal shot. Binoculars and image intensifiers can be used to help locate and identify potential target animals. For safety reasons the telescopic sights on the rifle must not be used to scan the area or check the identity of a potential target – a firearm should never be pointed at anything until it has been positively identified as a legitimate target.

### Shot placement

As badgers present relatively low targets, particularly if walking in “tram-lines” or wheelings, or in well worn badger runs, any shot must be taken from close enough for the shooter to ensure that the target animal will be killed humanely. A well-placed shot from within range should prove to be overwhelming and result in a rapid death.

The correct target area for shooting badgers in the field (not in cage-traps) is the **heart/lung area** of the chest. The badger’s neck and shoulder areas are extremely well-muscled and, when building up body weight during the late summer and autumn, a substantial layer of sub-cutaneous fat develops over the body. The badger’s anatomy differs significantly from that of deer or foxes, and the badger’s rib-cage is located appreciably further back than might be anticipated by those used to shooting these species. The “dip” in the badger’s back, behind the shoulders, provides the best guide to the target area, containing heart and lungs, which lies below and slightly posterior to this (Fig.1).

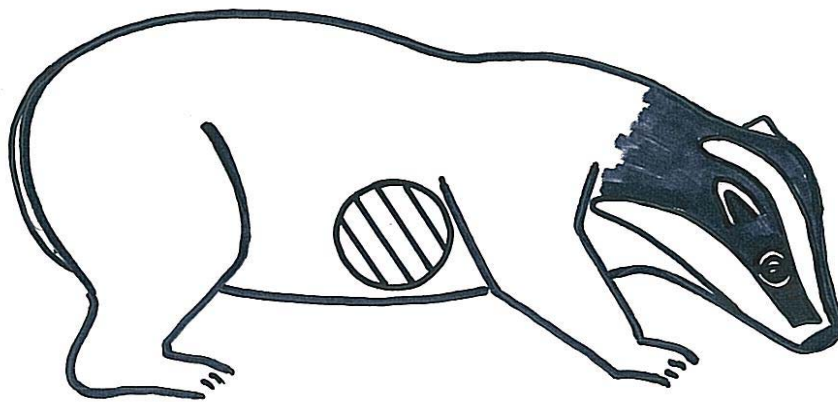


Figure 1: Hashed area shows the target site for a heart-lung shot from a broadside angle.

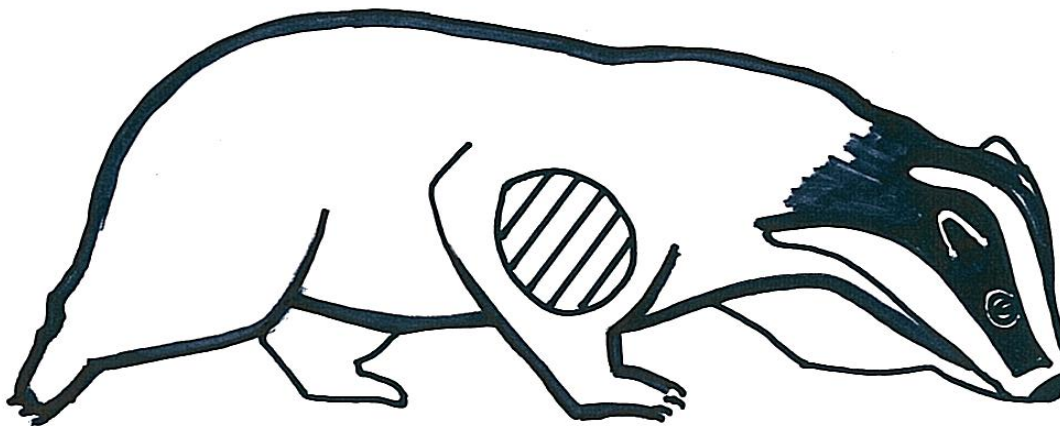


Figure 2: Badger in walking posture. Even if the animal is only at a slight angle to the shooter the forelimb can obscure a large part of the target area.

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Because of the slant of the shoulder blades, the elbow travels somewhat further backwards than in foxes and deer, and consequently when the fore-leg is in the vertical position, the heart/lung area will be temporarily obscured by a robustly bony limb (Fig. 2). The heavy fringe of fur on the foreleg may further confound identification of the precise point of aim. The angle of the badger relative to the shooter will alter the effective size and position of the target area on the surface of the animal. The further the animal is from a full broadside view the smaller the target area will appear and the less certain accurate shot placement becomes (see Fig. 2). **Shots must only be taken when the animal is stationary and when the target area is clearly visible and the animal more or less broadside on**, so the shooter is confident of an accurate and humane shot.

The head of an otherwise stationary animal may be moving, or moved without warning. It is the part of the body most likely to be moved first if the animal becomes aware of any potential danger, or periodically when checking its surroundings. Because of the potential for a free-ranging badger to move its head without warning, **a head shot presents an unacceptable risk of wounding and must not be attempted**. In addition, the neck of the badger is long and the bony processes of the vertebrae are short, so the neck presents a target line only about 2.5cm (1 inch) thick. The risk of non-fatal injury therefore makes **a neck shot unacceptable in any circumstances**.

### **Shot placement from a high-seat:**

Erection and use of high-seats should comply with the relevant health and safety requirements (which are outside the scope of this document). High-seats must provide a stable platform from which to shoot and when climbing up to or down from the seat firearms must not be loaded. The Deer Initiative Best Practice Guides have more information.

Shooting at close range from a high seat has the advantage of revealing the relative broadness of the badger's chest, so increasing the opportunity for a well-placed shot to strike the heart and other vital organs within the chest.

Figures 1&2 should be referred to, noting the dip in the back and position of shoulders as reference points. Account needs to be taken of the angle of entry of the shot/bullet, but orientation of the badger relative to the shooter may be less important if the animal is close to the high-seat as the shot/bullet will be entering from above rather than from the side.



## Humane Shooting

Before carrying out any shooting the shooter must ensure the accuracy of the weapon to be used and that his own level of marksmanship is of a sufficient standard for the situation in which the firearm will be used (in all cases only those who pass the Defra approved competency course will be licensed, but above and beyond that individuals will need to ensure that they operate within their own limits). In the case of rifles fitted with telescopic sights, these must be checked to ensure that they are accurately 'zeroed' for the ranges at which shooting is likely to take place.

*Rifles:* A skilled marksman using a *centre-fire* rifle (*NOT* a rim-fire rifle), and using a bullet of a type designed to expand or deform on impact, should, in reasonable field conditions, be confident of a clean kill up to a range of 50 to 70 metres. Shots must only be taken from a distance and position at which the shooter is confident of hitting the target area. Expanding bullets are designed to distort on striking tissue and, on hitting the rib-cage, should cause immediate extensive destruction of the heart and lung tissue. Death would be expected to follow rapidly.

**Operators must never feel rushed into taking a shot.** The key consideration is for an accurate and humane shot. If in doubt wait for another opportunity, do not shoot.

Remember that allowing a badger to walk away is always an option and should be considered a reasonable outcome if there are any reasons as to why that badger might not be able to be humanely killed at that particular time.

*Shotguns:* Shotguns are only suitable for use at very short range. **The shooting distance when a shotgun is used must not exceed 20 metres and where possible should be within 10 metres.** Shotguns (12 bore only) should be used with cartridges loaded with BB or AAA shot. Competent use of such cartridges, at short range, should lead to a rapid kill.

## Shooting at bait points

Badgers will learn to take bait from regularly placed bait points, using bait such as peanuts, or peanuts mixed with treacle, and this presents a potential means of attracting animals to a safe shooting location where shooting effort can be directed with a reasonable degree of predictability and likelihood of success. Bait take, and predictability of badgers coming to the bait point, are likely to be maximised if bait points are located near to active setts and close to well-used runs. However, to ensure that a second shot can be taken if necessary, **bait points**

**must be more than 30 metres from the nearest sett and must be far enough from protective cover to avoid the risk of a wounded badger being lost.**

Bait points should be chosen to ensure a safe shooting location, with no livestock or where livestock can be excluded, and away from any rights of way, boundaries with third parties, edges of villages or rural dwellings. A high seat, or other suitable shooting platform should be used – this can include a hillside or stationary vehicle but must ensure a safe line of fire is maintained. A raised location can help to carry scent from the shooter, which may deter the badgers, away from the location. The high seat should be positioned, according to the prevailing wind direction, downwind from the bait point and any nearby setts, but ideally in a position so that a wounded badger running back to the sett will still pass within range of the shooter – a retreating badger, running directly away from the shooter, is unlikely to provide an opportunity for humane despatch by a second shot and may quickly get out of range of the weapon being used.

Bait points should be pre-baited for a period of time before any shooting takes place. Depending on how quickly the badgers find the bait, this may take up to a week, or more – it is probably best to allow ample time for this to ensure that the majority of animals in the location are used to feeding on the bait, before doing any shooting. It may also be advantageous to have several separate bait piles, far enough apart to allow several badgers to feed at a time.

Appropriate rifles may be used for shooting over bait points, as for controlled shooting. In this case, a sound moderator is likely to be a particular advantage, because of the expectation that shooting will take place at the same location on repeated occasions. Where rifles, fitted with telescopic sights, are used at close range, it is important to ensure that the point of aim is corrected to allow for the difference in elevation between the rifle barrel and the sights – the zeroing of the rifle and sights must be checked beforehand for the ranges that will be shot over.

**Shooting over bait points is the only method for which shotguns may be used.** Due to the very low impact energy of individual shot and unpredictable pattern of shot at a distance, shotguns must only be used at close range. This means being within 20m and if possible within 10m of the badger when taking the shot. The use of shotguns will therefore be limited to shooting from a high seat/shooting platform over a bait point at distances of no more than 20 metres.

## **Shooting badgers in groups**

Badgers are more likely to be encountered in groups where a bait station has been established, but these principles apply to any situation where more than a single badger is encountered. If a badger is present when another badger is shot it is reasonable to assume it will become instantly wary of that area and of any other factors it associates with that situation (e.g. lights, noise). In the long run this may well make culling badgers more difficult. It is therefore not recommended to shoot any badger that is with other badgers.

## **Following up a Shot**

**The aim must always be to kill the animal quickly with the first shot.** If the shooter is not confident of doing so the shot must not be taken. Nevertheless, the shooter should consider the possibility of needing to take a second shot and be prepared to do so. This includes choosing the situation in which to take a shot, such as avoiding areas where a wounded badger might quickly gain access to a sett, dense cover, or land where the shooter does not have permission to shoot. The shooter should ensure that, if there is any indication that a badger may not have been killed instantly, there is the capacity to fire a follow-up shot. If in doubt, a second shot should be taken. It may be advisable to leave a fallen animal, which is assumed to have been fatally shot, for a couple of minutes (but never more than 5 minutes) before making an approach; the rapid approach of a human may spur a fatally wounded animal to take flight and find refuge somewhere inaccessible. When approaching, the shooter should do so from downwind and from behind the badger, stopping periodically to check (with binoculars) for signs of life. Until death of the animal can be confirmed, the shooter must be prepared to take a further shot if necessary.

## **Using dogs to locate badgers believed to be injured**

As the aim must always be to kill with the first shot, the need to use dogs to locate badgers believed to be injured is expected to be exceptional. See section above on 'Use of dogs above ground'.

## Confirmation of death

After shooting a badger, regardless of first impressions (unless it is obviously still alive), an assessment should be made as to whether it has been successfully killed. Signs that should be checked for include:

- correct shot placement (i.e. entry hole is in the target area / chest);
- absence of rhythmic breathing (i.e. no chest movement / rise and fall);
- absence of eye movement / blinking reflex;
- eye wide open and the pupil dilated;
- absence of large muscle spasms (i.e. muscular movement / reflex).

The animal should be touched with a blunt instrument following the above checks to test for any reaction. A final check to confirm the absence of life should be made by touching the eye and assessing for a blink reflex (a small stick or similar should be used to guard against being bitten should the apparently dead animal not actually be dead). Disposable gloves should be worn when handling the animal.

As the aim is for a rapid death, checks for signs of death must be made as soon as practicable, but it is advisable to leave a fallen animal a couple of minutes (but not more than 5 minutes) after the shot has been taken before approaching.

After the animal has been confirmed dead the firearm should be made safe.

Involuntary muscle spasms affecting the limb and body muscles can occur within a minute of a shot through or near the brainstem and are consistent with a correctly placed shot. These convulsions generally last for no more than 1 - 2 minutes and animals remain unconscious throughout. Absence of convulsions does not mean that the shot was unsuccessful. Final checks for a successful kill should not be made until any convulsions have ended.

A final check for signs of life must be made at least 3 minutes after the final shot to that animal and before the animal is bagged up. Only once the animal is confirmed dead and all visible movement/reaction and the animal's heartbeat has ceased, should the animal be bagged (see carcase disposal below).

## **Carcase Handling, Removal, Storage and Collection**

Badger carcasses will not routinely be collected for post-mortem examination or disease analysis, but some may be required for monitoring purposes.

In handling carcasses, particular attention should be paid to health and safety issues to avoid possible aerosol transmission of bacteria and other potential hazards such as ticks or other parasites.

## **Handling of Despatched Badgers**

Operators do not need a licence to handle dead badgers as long as they have been taken and killed lawfully.

Operator safety: badger carcasses and any material from them (urine/ faeces/ blood etc) may contain TB and provide a source of infection. Operators must take appropriate action to minimise the chances of spreading this material around and infecting themselves, colleagues or the area in which they are working. Appropriate protection should be worn (e.g. gloves, mask, overalls, washable boots).

## **Regulations**

The EU's Animal By-Products Regulation 1069/2009 lays down health rules concerning animal by-products (ABPs). The regime divides ABPs into three categories, according to the degree of risk which they pose, and specifies the permitted treatment or disposal routes for each category. Wild animals normally fall outside the scope of the Regulation, but when they are, "suspected of being infected with diseases communicable to humans or animals," they fall within the list of Category 1 materials (Article 4(1)(v)). bTB is a zoonotic disease and therefore the carcasses of any badgers, which are suspected of harbouring the disease, fall within the definition of Category 1 ABPs.

Category 1 materials are required to be collected, transported and identified without undue delay and either incinerated in an approved incineration plant or processed in an approved rendering plant, with the processed products being finally disposed of as waste by incineration or burial in an approved landfill. Burial without first processing is not a permitted disposal route for Category 1 material.

## Carcase bagging

Carcases must be double-bagged in heavy-duty PVC sacks, following the procedures set out below:

- bagging should be carried out at the site where the badger is killed unless there is good reason not to;
- great care must be taken and disposable gloves worn at all times when handling carcasses;
- take the first bag and:
  - roll it down three-quarters;
  - carefully place the carcass inside;
  - unroll the bag;
  - “goose-neck” the bag (a “goose-neck” is formed by making a ring around the top of the bag with one hand and then pulling the neck of the bag through the ring to make the neck of the bag as thin and long as possible, then twist it like a rope);
  - either knot the “goose-neck” or tie it with PVC tape or strong string.
- the first bag must then be placed in the second;
- the second bag is then “goose-necked” and either knotted or tied;
- gloves must be disposed of in accordance with local Clinical Waste Disposal Instructions;
- attach a label to the outer bag (see below).

Following the above procedures will help avoid possible aerosol transmission of bacteria from carcasses.

A label should be attached to the bag indicating it is a badger for collection and disposal as category 1 waste.

### Storage

Bagged carcasses must be stored on site pending collection. Alternatively, collection points could be established but these would need to be approved under ABP rules as an intermediate site (transporting the badger carcasses to such a site would also need to be done under ABP rules on transport). The cost of meeting the required standards for this needs to be taken into account.

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The length of time a carcass can be stored requires judgement as it is dependent on several factors such as the season and the appropriateness of the storage conditions (e.g. refrigeration and protection against vermin). A carcass must be in a condition that a collector will accept. Carcasses must not be stored outdoors or where scavengers such as foxes, dogs or rats could have access to them.

### Collection

Collection could be done as part of the National Fallen Stock Scheme (NFSS) or by an alternative collector within the normal collecting arrangements for other fallen stock. As badger carcasses would be Category 1 material, all material collected as part of this round will be classed as Category 1 material. The Animal By-Products Regulations prohibit bringing ABPs on to any premises where livestock is kept. Therefore carcasses must not be removed from a vehicle collecting other ABPs from other premises.

### Incineration

Once Category 1 ABPs have been collected, they must go to Category 1 approved renderers or incinerators either directly or via Category 1 intermediate plants. Incinerators and rendering plants can be found on the Animal Health website at:

<http://animalhealth.defra.gov.uk/managing-disease/animalbyproducts/premises.htm>

### Risks of infection

In theory all waste material arising from the operation (such as splatter) will be Category 1 material. However judgement is required to ensure proportionate effort and costs. Guidance can be provided for operators on bio-security and disinfection.

Care should be taken to deal with any blood and other carcass debris that may be left on the ground after shooting. As much potentially infected material as possible should be bagged up with the badger. Any debris left should be well covered by soil (at least 3 inches/ 8cm).

### Cleansing & disinfection of equipment

If equipment is to be used on more than one farm then before moving to the next farm equipment which might transfer disease, such as boots and the wheels/ undersides of vehicles, must be cleaned of biological material (soil etc) and then disinfected with an appropriate

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disinfectant. To remove the smell of disinfectant which might be detected by badgers, a final rinsing with clean water is recommended.

### **Other waste**

All clinical waste (e.g. used gloves/disposable clothing) must be collected and disposed of in a designated bag which must be returned to a pre-determined disposal point for final disposal.

## **Other issues**

### **Monitoring of sett activity and closure of inactive setts**

For the purpose of disease control, as long as densities are sufficiently reduced, it is not generally necessary or cost effective to remove every last badger. Culling which is detrimental to the survival of the local population is prohibited under the Bern Convention and there will be upper limits on the number of badgers that can be taken in a licensed area. It is therefore expected that badger activity will continue in culled areas, albeit at lower levels.

Monitoring sett activity will help to provide an indication of the effectiveness of the control operation and whether further control at a particular site (within the 6 week period) would be appropriate. It may also be useful in ensuring that badgers are not completely eradicated from the local area. Any such monitoring must not involve interference with a badger sett, such as obstruction or damage to the sett. However, the placing of small amounts of debris (e.g. twigs, straw) across sett entrances, in such a way that they can easily be displaced by any badgers going in or out, is not considered to require a licence and will provide a useful indication of which entrances continue to be used by badgers.

It must not be assumed that because control has been carried out near a sett, the sett is no longer occupied and can therefore be closed down. In the Randomised Badger Culling Trial it was estimated that cage-trapping removed, on average, about 70% of the local badger population. It is therefore quite likely that some badgers will remain in an area following trapping and also following controlled shooting. As long as a sett displays signs that indicate current use by a badger, it is protected under the Protection of Badgers Act 1992 and must not be interfered with without a licence.



## Health and Safety

An appropriate risk assessment should be conducted before any shooting is carried out and counter measures put in place to ensure safety of all involved in the operation. These should include measures to minimise risk of exposure to potentially infective material, use of appropriate protective clothing and other measures where risk of exposure is identified, measures to avoid injury from handling badgers, as well as risks of using firearms. Relevant shooting organisations should be able to provide appropriate information on safe firearms handling.

## Record keeping

Certain information will be required in order to complete the licence return to Natural England. In addition, it is best practice to record on a daily basis what has been done, where and by whom. Day-to-day details of the control operation should be recorded by the licensed operator in a field notebook. Periodically, field notes will need to be passed to the licence coordinator to enable him/her to complete the necessary licence returns. It is vital, therefore, that adequate and accurate information is recorded.

Records must include farm/site name, location, number of shooting teams and shooting nights undertaken, and the actual location at which each badger was killed. Kill locations should be recorded as a six figure Ordnance Survey grid reference – e.g. in the format SX789456. Grid references can be found by checking the location on a 1:50,000 or 1:25,000 Ordnance Survey map of the area, and following the instructions on the map for recording a grid reference, or by using a hand held GPS device. Farm or holding locations can be recorded as a four figure grid reference (e.g. the equivalent 4 figure reference identifying the kilometre square in which the 6 figure example given above is found, would be SX7845).

This information is likely to be sensitive so care must be taken not to lose field note books or leave them unattended (e.g. in unlocked vehicles).

**Further information:** (this information is likely to be based on species other than badgers and whilst broad principles apply the detail may need to be modified for badgers).

BASC 2004. A Code of Practice: Lamping (Night Shooting). British Association for Shooting & Conservation, Wrexham.

[http://www.thedeerinitiative.co.uk/pdf/guide\\_culling\\_highSeats010509.pdf](http://www.thedeerinitiative.co.uk/pdf/guide_culling_highSeats010509.pdf)

## Draft Best Practice Guidance: Cage-trapping and despatch

Relating to	Licences granted under the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981
Date of guidance	July 2011
Valid in	England
Who for	Persons authorised to kill or take badgers by a specific licence under the Protection of Badgers Act 1992 <sup>2</sup> and acting in accordance with that licence and the relevant Wildlife and Countryside Act Class Licence
Relevant Class Licence	WML-CL04 Use of cage-traps and artificial light.

### Overview of guidance

This Best Practice Guidance describes best practice for the use of live-capture (cage) traps followed by humane shooting and related use of artificial light for the taking and/or killing of badgers. Compliance with this guidance will normally be a condition of a licence issued for the taking/killing of badgers by this means to prevent the spread of bovine TB. Actions described in this guidance may only be undertaken where a specific licence under the Protection of Badgers Act 1992 authorising the killing and/or taking of badgers has been issued AND in accordance with Class Licence WML-CL04 covering these methods. This guidance does NOT confer any authority to undertake the actions described. Those acting under licence must ensure that all licence conditions are complied with and must take all reasonable steps to ensure that the licensed operations are carried out safely and humanely. This document deals with the use of traps and trapping. It does not cover planning and carrying out an effective badger control operation over the whole of a (proposed) licence area; this should be dealt with in the application Badger Control Plan.

### Legal protection for badgers

Badgers and their setts are protected under the Protection of Badgers Act 1992 (POBA) and certain methods of killing or taking them, including use of cage traps and artificial light or any device for illuminating a target or sighting device for night shooting, are prohibited under the Wildlife and Countryside Act 1981 (WCA). As well as a licence under POBA, cage-trapping

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<sup>2</sup> Where the conditions of a licence granted under the Protection of Badgers Act 1992 or the Wildlife and Countryside Act 1981 to kill or take badgers are at variance with the guidance presented in this document then the conditions of that licence take precedence.

must be carried out in compliance with the conditions of the relevant 'prohibited methods' Class Licence issued by Natural England under the WCA.

**A person guilty of an offence under POBA or the WCA may be liable on summary conviction to imprisonment or a fine, or both.**

## Requirements & Constraints

### Competence

Licence holders must take all reasonable precautions to avoid wounding badgers or causing unnecessary suffering and must have full regard for safety considerations. Trapped badgers should be despatched using a 12 bore shotgun and a basic level of competence in marksmanship and safe handling of firearms is required. **Persons killing badgers by this method must have attended a Defra-approved training course on the humane killing of badgers.**

### Weapons and Ammunition

Badgers must only be shot within the terms of an appropriate licence using firearms and ammunition that comply with the Protection of Badgers Act 1992. The type of firearm/ammunition allowed and any circumstances which may restrict their use will be specified in the licence conditions. For the humane killing of badgers in traps this is likely to be limited to 12 bore shotguns using appropriate frangible ('reduced hazard') ammunition (see **Frangible Ammunition** below).

The use of an automatic or semi-automatic weapon (i.e. one with a magazine capable of holding more than two rounds (cartridges/bullets) is prohibited under the Wildlife and Countryside Act 1981 and will not ordinarily be licensed for this purpose. The use of artificial light in the course of trapping or despatching trapped badgers is only allowed under licence and users must comply with the relevant Class Licence issued by Natural England.

### Shotgun Certificates

A person applying for a licence under POBA to shoot cage-trapped badgers with a shotgun must be in possession of a current shotgun certificate and have authority to shoot on the land where the cage-trapping and despatch by shooting is proposed. Any queries on firearms should be directed to the local Police Firearms Liaison Officer in the first instance.

## Sett Interference

POBA prohibits interference with a badger sett. A licence to take or kill badgers, unless specified in the licence, does not permit interference with a badger sett. POBA defines a badger sett as “any structure or place which displays signs indicating current use by a badger”. Interference includes damaging a badger sett or any part of it, destroying a sett, obstructing access to a sett, causing a dog to enter a sett, or disturbing a badger when it is occupying a sett.

The placing of small twigs or straw in sett entrances in order to record animals passing in or out of the sett can be a useful technique for monitoring sett activity. As long as the materials are lightly placed, and do not obstruct the access of badgers to or from the sett, this does not require a licence. In addition, a small amount of sand can be placed on the ground at the sett entrance to detect paw prints, assuming suitable weather conditions (heavy rain can wash the prints/sand away, very dry sand does not hold the print shape).

## Licensed Persons

A licence under the POBA to kill or take a badger permits only the person(s) named on the licence to carry out the authorised actions or, in the case of a company, an officer or employee of the company; the work cannot be delegated to a third party. Companies can act only through their agents, i.e. employees or officers. Taking and/or killing badgers using cage-traps is also a prohibited method under the WCA. Persons involved in the actual taking and/or killing of badgers using cage-traps must be covered by appropriate licences under both Acts. Persons solely assisting in the operation will need to be covered by a WCA licence if they are using one of the methods prohibited by that Act, but if not actually taking/killing badgers they will not need a licence under POBA, as long as the person who is taking/killing badgers is acting lawfully and is covered by the necessary licence under POBA. For example, those operating a lamp or torch to enable someone else to take/despatch a badger will need to be covered by a WCA licence only, whereas the person doing the actual shooting (with the aid of the artificial light) will need to be covered by a POBA and WCA licence. Persons setting traps to catch badgers would need to be covered by both a WCA and POBA licence.

When applying for licences, consideration needs to be given to which person(s) will be carrying out each activity. It is recommended that a minimum of two people are present to deal with any

badgers caught in traps and at least one other person should be licensed in case needed (e.g. if one of the named persons falls ill).

## **Planning**

### **Police liaison**

Prior to any control operations it is advisable to inform the local police of dates, times and areas where control will take place. Different police areas may require different information so it is important to check exactly what information is expected.

### **Public safety**

The advance planning and conduct of badger control must take full account of the need to avoid risks to public safety.

### **Trapping strategy**

As well as planning how the work will be carried out under normal circumstances, planning must include contingency plans to mitigate the effects of events which may confound the work, for example bad weather, interference from people opposed to culling, lower than expected numbers of badgers being shot, key people being ill/unavailable.

Cage-trapping & shooting must be carried out only as part of a coordinated strategy. More information on this is provided in the Badger Control Plan guidance note. The aim of the control in the first year/season of the licence must be to reduce badger densities (numbers per area) significantly over a short period of time (6 weeks). Culling in subsequent years of the licence must also be carried out over a short period each year (6 weeks) and must aim to keep badger densities at the appropriate level for the duration of the licence, without causing local disappearance. This should be planned for when deciding the number of traps and trappers needed and the personnel to assist them.

## Cage-trapping procedure

### Seasons

**Trapping of badgers for culling will not be permitted from 1<sup>st</sup> December to 31<sup>st</sup> May, inclusive.** This is to reduce the risks of trapped badgers suffering exposure due to severe weather or of leaving dependent cubs underground to suffer starvation as a result of nursing females being culled. However, even during periods when culling is permitted, if an operator has reason to suspect that a trapped animal may be a lactating sow with dependent cubs, then the animal must not be shot and must be released as soon as practicable. In addition, trapping should be suspended at any time of year if, due to bad weather, there is a risk that badgers in cage traps could suffer from extreme exposure. Both temperature and wind-chill should be taken into account in assessing the likelihood of this (see also trap placement below).

### Equipment

Cage traps must be of a design specified in the licence(s). All traps are activated by means of a string trip-line (2-ply garden twine), which is placed such that an animal entering the trap must push into it to reach the bait at the back of the trap. When the string is pushed it activates a trigger mechanism, which closes the trap door - once closed, this is normally held in place by a brace mechanism or gravity, depending on design. Only garden twine may be used as it breaks easily if a badger becomes entangled in it; stronger string or wire may not break and can cause injury. The following additional equipment is needed:

- wire (minimum diameter 1mm) or cable-ties for fixing trap doors open
- 2-ply garden twine for re-setting traps
- spade for bedding in traps (see below)
- 40mm PVC pipe for depositing peanuts inside the trap – alternatively a spade may be used for this purpose
- restraining wicket(s) (see below)
- carrying handles for traps
- spare trigger bars and flaps for the trap release mechanism
- pliers or multi-tool for fixing doors open with wire
- container for carrying peanuts
- blunt instrument for corneal reflex test.

## **Pre-trapping survey**

Before any trapping is carried out all known setts in the area to be trapped should be visited and their level of activity checked by searching for field signs, such as tracks, bedding, fresh spoil and well-worn runs. Once these checks have been completed, decisions can be made about trap placement, deploying traps, as far as possible, at active main setts. In some circumstances, where setts may be inaccessible or located just outside the area where permission for trapping has been granted, remote trapping (trapping away from the sett) may be appropriate. The occurrence of non-target species (i.e. not badgers) must be considered and taken into account to minimise such captures.

## **Site selection**

In order to maximise captures, traps should be placed where badgers are most likely to be encountered, which may not necessarily be the most convenient sites for the trapper. The obvious sites will be near to, but not on, main or well used setts. If other sites are known to be well frequented by badgers then these could be used.

## **Trap placement**

Ideally, the number of cage traps deployed should be no fewer than the number of badgers expected to be at the sett/location being trapped, so that trap numbers do not limit the number of animals caught in the critical first night or two of trapping. Estimates of likely catch may be based on an average group size per sett in the area and take into account previous culling history if known (e.g. the Randomised Badger Culling Trial (RBCT); the 'Krebs Trial') or experience gained as the cull progresses. In the absence of any other information, as a rule-of-thumb, a main sett might be assumed to have 6 adults and, over the summer, an additional 2-3 cubs/juveniles. Thus, at a main sett, one should plan for 8-9 badgers and so use at least this number of traps. If available, extra traps should be used. During the RBCT roughly two traps per badger were used, so 16-18 traps would have been used for 8-9 badgers.

Traps must only be placed on land where permission has been granted. If a sett is identified on land which has not granted permission, traps should be placed along the boundary closest to the active sett (on land where permission has been granted) and adjacent to the runs that lead to and from the sett. However, due regard must be given to non-participation land, where the landowner/occupier does not want to allow culling, and particularly where badgers have been or

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are being vaccinated. In this case, there should be no attempt to 'draw out' badgers from the non-participation land by trapping along the boundary.

Where access is available, traps should be positioned at or close to the active setts, ideally beside runs radiating from the sett. Traps should never be placed directly on a badger run, but always to one side roughly at right-angles to the run, with the trap entrance facing the run. This will encourage badgers to enter easily whichever way they are travelling along the run.

The traps should be 'bedded in' a little on the ground surface, to ensure that they are stable and securely positioned. This may require the creation of a level base using a spade. The floor of the trap should then be covered with soil but care must be exercised at the front of the trap so as not to impede proper closure of the door. Traps must not be positioned directly on spoil heaps or block access to, or be dug into, sett entrances or tunnels.

Traps should be positioned to make the maximum use of any natural cover available to give trapped animals some shelter from the elements (including exposure to wind/rain and overheating from the sun) and to reduce the risk of third-party interference. Additional cover may be provided by using available materials on site. Care must be taken to ensure that vegetation, or other materials used, do not foul the trip mechanism. If traps have to be placed on a slope, they must be securely located, for example by fixing them in place using stakes, to avoid the risk of them toppling as a result of trapped badgers moving about in the trap. Traps must also be sited away from other hazards, including areas at risk of flooding and those containing livestock. Consideration must be given to the ease with which a trapped badger can be despatched. Positioning of the cage-trap must allow the accessibility necessary to shoot the badger, or if that is not possible it must allow the trap to be easily withdrawn to a nearby place suitable for shooting a badger in the trap.

To minimise disturbance, and the risk of badgers deserting the site, all the traps at a single trapping location should be placed on the same day and avoiding dusk or dawn, when the badgers are likely to be active above ground.

The number of traps positioned must be recorded in a field notebook and marked on a map or site plan. The locations of all traps must be carefully recorded so that they can be accounted



for on each visit and could be found by another person, should the original operator be unavailable for any reason.

## **Pre-baiting**

It may help if some bait is put out at trapping sites in advance of the traps being deployed, so getting the badgers used to feeding on the bait and shortening pre-baiting times once the traps are in place.

Traps should be pre-baited with suitable bait, such as peanuts, before being set to catch. This will encourage badgers to get used to entering the traps and maximise the potential number of captures in the first few nights of trapping. Pre-baiting therefore needs to continue for long enough to ensure that as many badgers as possible are visiting the traps. Normally this would be expected to take 3-10 days/nights. Bait can be placed in the trap using a 40mm PVC pipe, spade or by hand. One or two handfuls of peanuts is a suitable amount, placed in a heap near the back of the trap, with a trail of peanuts laid down the centre of the trap and out of the open doorway. If, after a number of days, the bait remains untouched, other baits should be tried – alternatives include oats, maize and fruit, particularly plums and sweet apples.

Bait should not be scattered widely in and around the trap as this may encourage badgers to dig under the trap from the outside, or reach in through the mesh, and may result in animals becoming 'trap-shy'. On the first day of pre-baiting some peanuts may be thrown down and around the active sett entrances to get the badgers used to the bait and encourage them to search for it. Pre-baiting should be done late in the day, to minimise the opportunity for non-target species to take the bait, but before the badgers are likely to emerge from the sett. Cage trap doors should be securely tied open with wire (minimum diameter 1mm) or cable-ties during the pre-baiting period so that badgers may freely enter but not be accidentally trapped. During pre-baiting, bait can be placed under a stone in the trap to help prevent access by non-targets. Traps should be checked daily during the pre-baiting stage and any bait taken replenished.

## **Setting of traps**

Only a person acting under the appropriate POBA and WCA licences may set traps to catch badgers.

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When adequate bait-take has been recorded in the pre-baiting stage, the traps should be set to catch. Note that each year it is important to coordinate trapping across the licensed area so that it occurs across the whole licensed area in as short a time as possible and within 6 weeks.

Before setting, ensure that each trap is in good working condition and replace or repair any faulty or damaged parts as required (e.g. trigger arm or hinge plate) and any sharp points or faults that might compromise badger welfare. The hinge plate and trigger arm should be lubricated with animal fat e.g. lard, to ensure that they operate freely. Synthetic lubricants should not be used as these could repel badgers.

When 'stringing up', the trap door can be held open by inserting the trigger arm on the door into the hinge plate on top of the trap (see Plate 1). To install the string trip-line (2 ply garden twine) attach one end of the twine to a notched 'stringing up' stick and thread it down through the roof of the trap to the rear of where the trap door hinges attach. Then feed the string out through one side of the trap just in front of where the bait will be placed (approx. 20-25 cm from the back of the trap and 10 cm off the ground; this may need slight variation according to terrain and trap type). The string should then be threaded back into the trap through the next mesh square and passed straight across and out the opposite side. It should then be threaded back into the trap, as for the other side, and out through the same mesh square in the roof that it originally entered by. The two ends of the string are then tied together with a slip-knot which is pushed down the length of the string so that it forms a triangle inside the trap (see Plate 2).

Ensure that the hinge plate is positioned more or less vertically, at  $\sim 90^\circ$  to the roof of the trap (see Plate 1), and cut the string off so that the end can be threaded through the top hole in the hinge plate and tied on; in wet weather, to allow for shrinkage, the string should not be set too taut. The end of the trigger arm is then placed in the lower hole in the hinge plate, such that it will be easily pulled free when the string is moved. This will allow the door to fall and close. Always test the door-closing mechanism to check that the trap operates properly before setting. The trap should be baited as before.

The number of traps *set to catch* at each sett/trapping location must be recorded in a field notebook (NB this may differ from the number of traps originally deployed).



**Plate 1:** Trigger mechanism of trap showing hinge plate in roughly vertical position (blue arrow) and tip of trigger arm passed through lower hole of hinge plate (orange arrow) to hold trap door open. The green arrow indicates the line of twine, once set, from the upper hole of the hinge plate, running towards rear of trap.



**Plate 2:** Setting the trap: the green line marks the line of twine from the hinge plate (which will be ~vertical when set) towards the rear of the trap, then through the roof into the trap 20-25cm from the rear, then out first through one side then the other, then back to join the central line of twine. This join should be made with a slip-knot that can be pushed down into the trap to form a triangular 'coat-hanger' shape, as shown. The other end of the string is then tied to the hinge plate with the door held open (as in Plate 1).



**Plate 3:** Trap set, showing peanut bait pile at rear of trap and wire mesh of floor loosely covered with soil.

### Checking traps

Only a person acting under a POBA licence may directly handle or shoot any live badgers trapped. Once the badger is dead, no licence is needed to handle it and assistants may help by, for example, placing the badger into a bag and disposing of it as described below.

Cage traps set to catch must be checked and any badgers caught must be dealt with as soon as practicable after dawn the following day. In any event, operators must complete this before 12 noon (this should be taken into account when planning how many operators are needed). Operators also have a legal responsibility under the Animal Welfare Act 2006 not to cause unnecessary suffering to any animal under the control of man – this includes a wild animal held in a trap.

Those traps which are most at risk of exposure to the elements or to human interference should be checked first.

Experience suggests that, following pre-baiting, most badgers will be caught in the first three nights of trapping. Setting traps to catch for much longer than this should only be undertaken if badgers continue to be caught; a maximum of 10 consecutive nights should normally be sufficient at any one trapping site. After this either fix traps open so they cannot catch or remove them from the site.

## **Non-target captures**

Any wild non-target species captured (i.e. not badgers) should be released at the point of capture, unless it is a species which it would be illegal to release, such as non-native species like grey squirrels, or humanely killed (unless it is of a species which it would be illegal to kill). Wild animals which are injured to an extent that would make it inhumane to release them must be humanely killed as soon as possible or taken without undue delay for veterinary treatment.

Any domesticated animals caught without signs of injury should be released at the point of capture, or returned to their owners, if applicable. Injured animals must be taken for veterinary treatment without undue delay and their owners notified if possible.

Non-target animals that are killed must be disposed of appropriately.

## **Shooting of captive badgers**

**The aim is to ensure that the captured badger is killed humanely and that the technique is safe for the operators, the public and any non-target animals in the vicinity e.g. livestock.**

A minimum of two people should be on site when shooting badgers in traps.

## **Operator Safety**

Inevitably, any shot needs to be taken from close proximity, with the muzzle of the weapon inside the cage, but not in contact with the animal (see below). Safety could clearly be compromised in situations where hard surfaces, such as the wire mesh of the trap, or surfaces on which traps are placed, may present significant risks of ricochet. A further concern is the risk of 'splashback' of tissue from the shot animal onto an operator in close proximity, which could spread infection. *Mycobacterium bovis*, the causative agent of bovine TB, is a zoonotic disease which means infection can pass from animals to people. Protective clothing is advisable, face masks and goggles should also be considered.

Before despatch procedures commence, a careful check must be made by the shooter to ensure that all people in the vicinity of the despatch location are in a safe position, behind the line of fire. If there is any risk of interference from unauthorised third parties, then on grounds of

ensuring public safety it may be necessary to abandon any attempt to shoot the badger(s). If so, they must be released unharmed.

## Frangible Ammunition and Shotguns

Frangible ammunition is designed to disintegrate on impact, avoiding the risk of ricochet. Defra has developed a frangible 12 bore cartridge designed to minimise the risks of ricochet or splash-back, whilst ensuring a humane kill at close range. It can be used with 12 bore shotguns, commonly owned by farmers and gamekeepers. A low-powered bismuth cartridge which can be fired from a wide range of 12 bore shotguns proved to be the most suitable option tested in Defra trials. Use of such a cartridge in a long-barrelled weapon, such as a shotgun, further reduces the hazard of splash-back. This combination of frangible shot and a 12 bore shotgun is likely to be the only option licensed. A double-barrelled or magazine-fed shotgun may minimise the delay in the event of a second shot being needed, but the use of a double-barrel will require modification to cage traps to allow the muzzle to pass through the wire mesh at the range of angles necessary to take a humane shot. A single barrel shotgun may not require any modification of the cage and prove easier to position correctly as the barrel will pass through any point in the mesh.

Frangible ammunition suitable for this use is not available 'off-the-shelf'. Licence coordinators are likely to arrange for those acting under a licence to have access to an authorised supplier.

## Situation of Shooting

Recommended practice for cage-trapping allows for trap-checking to be carried out in daylight hours, but there may be occasions when captured animals are despatched during darkness. In either case the shooter should be familiar with the terrain, having made visits during daylight to study the area, to carry out a risk-assessment, and to check the trap locations for hazards to safe shooting. Care should be taken to avoid any risk to non-target species, including domestic animals and livestock, and to ensure that there is no risk of accidental injury to humans. The ground on which the traps are placed must provide a safe backstop. If use of artificial light (e.g. a lamp or torch) is necessary to aid despatch, then its use must comply with Class Licence WLM-CL04 .

It is expected that in order to minimise stress/ disturbance to the trapped badgers, they will be shot in the traps they are trapped in, on-site, without any need to move them to another site.

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Badgers should only be moved to another location for shooting if they cannot be safely shot without interference from third parties where they are trapped. In any case disturbance to the badgers and any time spent in transit should be kept to a minimum. If badgers are moved, covers should be placed over the traps to help keep them calm and badgers must be allowed to settle before being shot.

### **Preparation for Shooting**

If a double-barrelled shotgun is to be used, one or more sections of mesh will need to be cut out of the roof of each trap to give adequate access for the weapon. This will need to be fitted with a closable flap that can be fixed shut, except whilst despatching a badger. A single-barrelled shotgun should be useable without modification of the traps. Before trapping commences, check that the muzzle of the weapon to be used passes easily through the mesh, or 'cut-out', such that the shooter will be able to find the angle of shot needed for shooting a captured badger in a range of different positions in the trap.

On arrival at a trapping site to check the traps, the weapon to be used should be unloaded, with no cartridge in the chamber. Where there are several traps set close to each other, as far as possible, all should be checked for trapped animals, without approaching the traps (see below), so that despatch can be planned to minimise stress for all the animals involved. As soon as the traps have been checked, if there are animals to be despatched, the weapon should be loaded and any trapped animals dealt with without delay. If a double-barrelled or magazine-fed shotgun is being used, two cartridges should be loaded so that a second shot can be taken quickly, should there be any doubt about the first having been killed instantly. If a single-shot shotgun is used, a second cartridge should be ready to hand, for a rapid second shot, if necessary.

It is best practice to approach cage traps for inspection quietly and calmly so as not to stress any captured animals. Unnecessary additional persons should not accompany the operators when checking traps and on no account should dogs be taken on site. The trapped animal needs to be in a position that allows a safe and humane shot to be taken (see Shot placement, below). Sometimes trapped badgers will be found to be asleep but they may also be active and alert. If a badger is very active it may be necessary to restrict its movement in order to shoot it safely. A 'wicket crush' may be useful, in this case, to restrict the space available and keep the animal in a suitable position. A 'crush' can be pre-constructed or may be improvised on site

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using stout sticks pushed through the bars of the side of the cage. Its purpose is simply to restrict the space for movement of the animal in order to ensure a safe and humane shot.

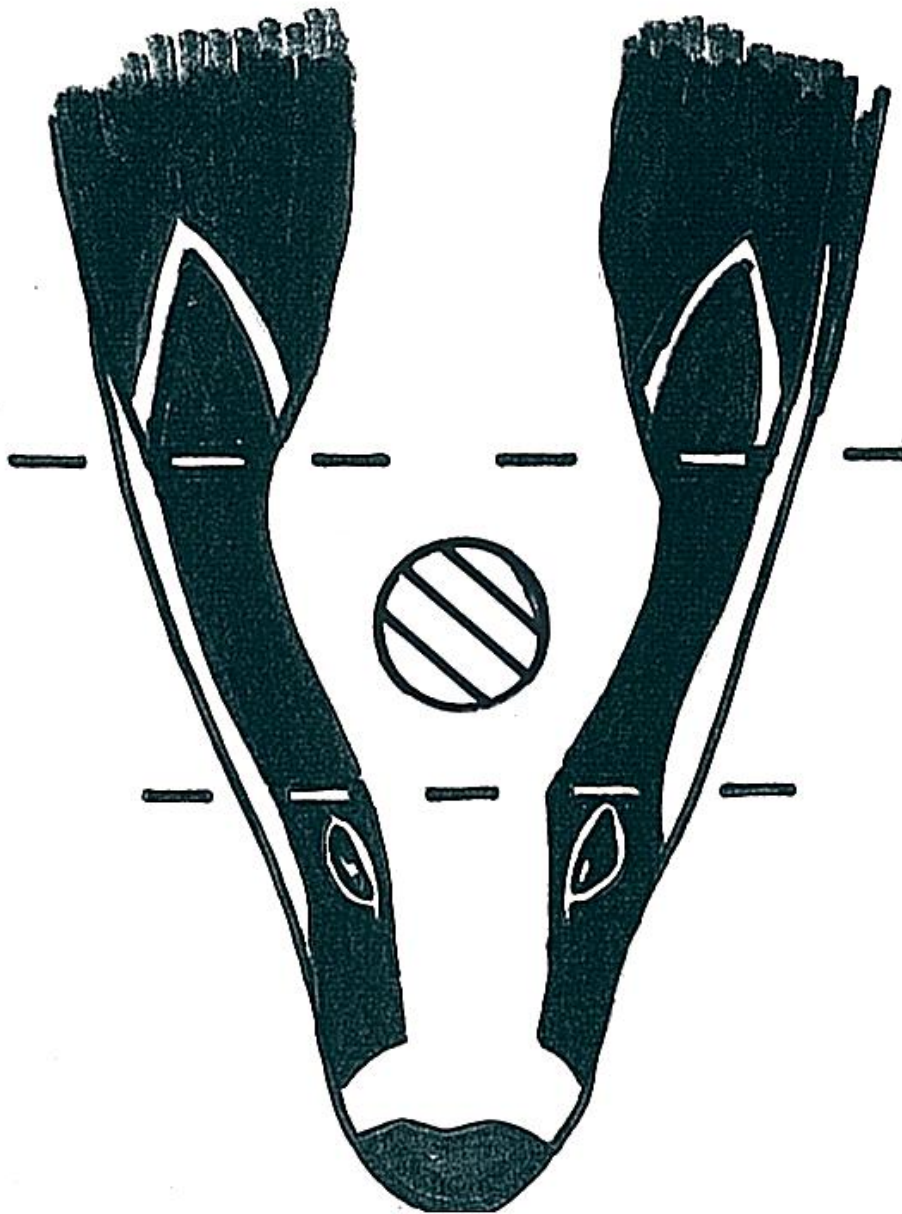
If more than one badger has been caught in the same trap, provision must be made for killing them both humanely. The operator will need to decide if they should be placed in separate cages prior to shooting or if they can be shot humanely in rapid succession whilst in the same trap. The main considerations are minimising any physical suffering or mental stress to the badgers and ensuring operator safety.

The badger must be settled before firing.

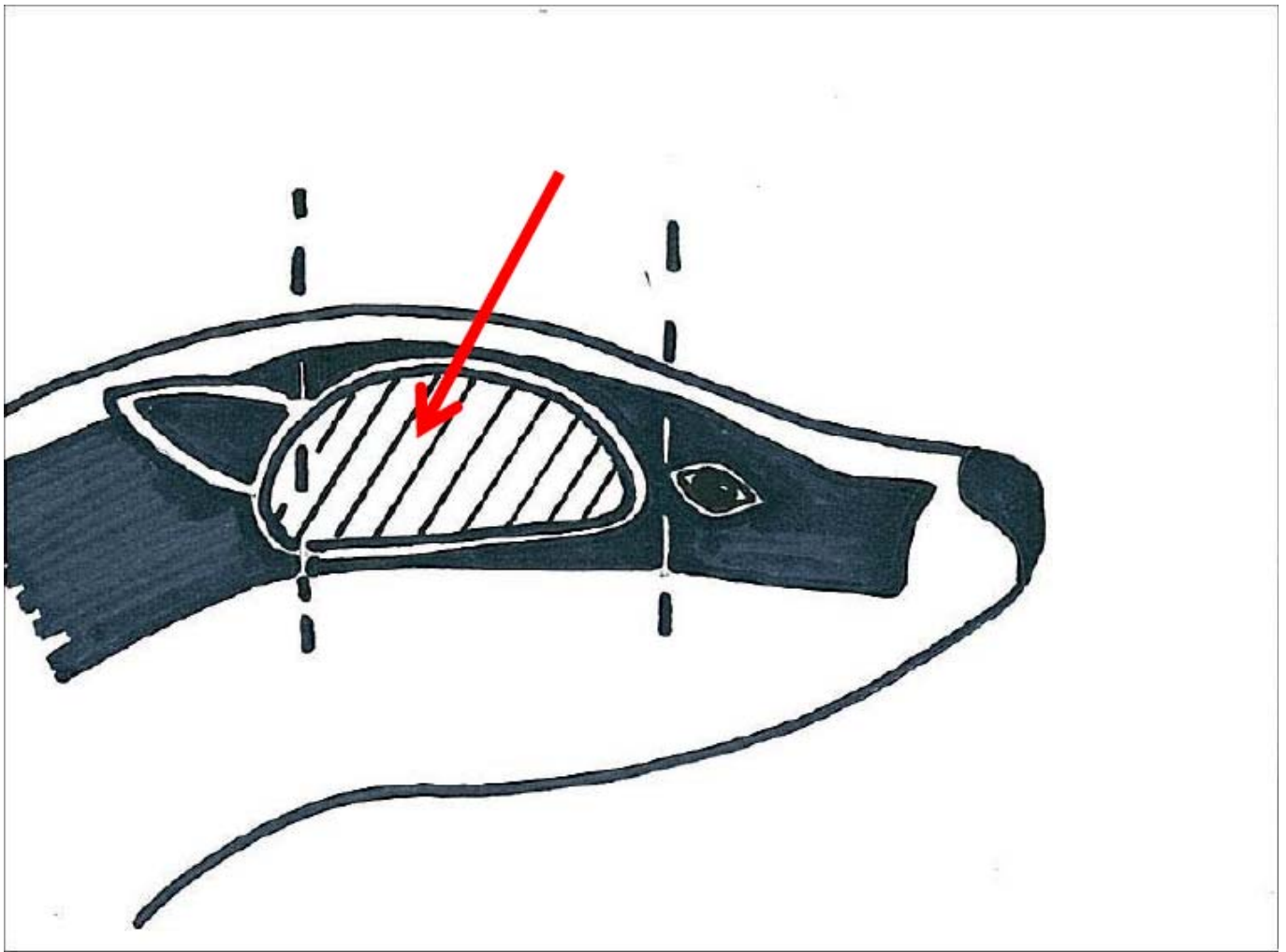
### Shot placement

A well-placed shot to the head from close range (~6 inches/15cm) should prove to be overwhelming and result in rapid unconsciousness and death. Neck shots and body shots are not suitable for despatch of trapped badgers. Cage-trapped badgers should be despatched by shooting to the head with the muzzle of the weapon pushed through the mesh of the cage trap **but not in contact with the animal**. The target is the front of the forehead with the shot angled through the brain towards the brainstem (see Figure 1). If this target area is not accessible, e.g. because of the way the badger is lying, then the animal should be disturbed gently until it alters its position sufficiently to make the target area available. Wickets pushed through the mesh and across the cage to restrict the badger's movement should be considered if the animal is active. The weapon should be held so as to keep the shooter's body as far away from the badger as is safely possible to avoid the risk of splashback of tissue hitting the shooter. For this reason, shots from directly above should be avoided. Immediately after shooting, checks should be undertaken to ensure that the animal is dead. If there is any doubt that a badger is dead a second shot must be administered as soon as possible. The operators should then deal with any further trapped animals at that location, before dealing with the carcass.





**Figure 1(a):** Shot placement for humane despatch of a cage-trapped badger: hashed area is the target area. Broken lines show approximate position of front and rear of brain using the position of the eyes and ears as markers.



**Figure 1(b):** Shot placement for humane despatch of a cage-trapped badger: broken lines show approximate position of front and rear of brain using the position of the eyes and ears as markers. Hashed area shows approximate position of the brain.

### Confirmation of death

After shooting a badger, regardless of first impressions (unless it is obviously still alive), an assessment should be made as to whether it has been successfully killed. Signs that should be checked for include:

- correct shot placement (i.e. entry hole is in the target area –see Fig.1)
- absence of rhythmic breathing (i.e. no chest movement / rise and fall)
- absence of eye movement / blinking reflex
- eye wide open and the pupil dilated

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- absence of large muscle spasms (i.e. muscular movement / reflex).

The animal should be touched with a blunt instrument following the above checks to test for any reaction. A final check to confirm the absence of life should be made by touching the eye and assessing for a blink reflex (a small stick or similar object should be used to guard against being bitten should the apparently dead animal not actually be dead). Disposable gloves should be worn when handling the animal.

As the aim is for a rapid death, checks for signs of death must be made as soon as practicable after the shot has been taken and initial checks should be made within 1 minute. However, if other signs indicate a correctly placed shot but involuntary muscle spasms occur (see below), final checks will need to be delayed until these have ceased. This should not delay dealing with other trapped animals at the same location.

Involuntary muscle spasms affecting the limb and body muscles can occur within a minute of a shot through or near the brainstem and are consistent with a correctly placed shot. These convulsions generally last for no more than 1 - 2 minutes and animals remain unconscious throughout. Absence of convulsions does not mean that the shot was unsuccessful. Final checks for a successful kill should not be made until any convulsions have ended.

After all the animals at the site are confirmed dead the firearm should be emptied of any remaining ammunition and stored safely.

**A final check for signs of life must be made *at least 3 minutes after the final shot to that animal and before the animal is bagged up.*** Only once the animal is confirmed dead and all visible movement/reaction and the animal's heartbeat has ceased, should the animal be bagged (see carcass disposal below).

### **Humaneness standards**

Shooting badgers in cage-traps at close range is considered to be a humane method for killing badgers. This killing method is permitted for use under licence in the POBA. To ensure a high level of humaneness, licence holders must ensure that all reasonable measures are taken to ensure this method is applied to a high standard. These measures include the adherence to

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these best practice guidelines, meeting the required competence and complying with licence conditions and monitoring.

**Operators should never feel rushed into taking a shot.** The key consideration is for an accurate and humane shot.

Remember that releasing uninjured badgers is always an option and should be considered if there are any reasons why a badger might not be able to be humanely killed at the time it is found in the trap.

## **Carcase handling, removal, storage and collection**

Badger carcasses will not routinely be collected for post-mortem examination or disease analysis, but some may be required for monitoring purposes.

In handling carcasses, particular attention should be paid to health and safety issues to avoid possible aerosol transmission of bacteria and other potential hazards such as ticks or other parasites.

## **Handling of Despatched Badgers**

Operators do not need a licence to handle dead badgers as long as they have been taken and killed lawfully.

Operator safety: badger carcasses and any material from them (urine/ faeces/ blood etc) may contain TB and provide a source of infection. Operators must take appropriate action to minimise the chances of spreading this material around and infecting themselves, colleagues or the area in which they are working. Appropriate protection should be worn (e.g. gloves, mask, overalls, washable boots).

## **Regulations**

The EU's Animal By-Products Regulation 1069/2009 lays down health rules concerning animal by-products (ABPs). The regime divides ABPs into three categories, according to the degree of risk which they pose, and specifies the permitted treatment or disposal routes for each category. Wild animals normally fall outside the scope of the Regulation, but when they are "suspected of being infected with diseases communicable to humans or animals" they fall within the list of Category 1 materials (Article 4(1)(v)). bTB is a zoonotic disease and therefore the carcasses of

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any badgers which are suspected of harbouring the disease fall within the definition of Category 1 ABPs.

Category 1 materials are required to be collected, transported and identified without undue delay and either incinerated in an approved incineration plant or processed in an approved rendering plant, with the processed products being finally disposed of as waste by incineration or burial in an approved landfill. Burial without first processing is not a permitted disposal route for Category 1 material.

### **Carcase bagging**

Carcases must be double-bagged in heavy-duty PVC sacks, following the procedures set out below:

- bagging should be carried out at the site where the badger is killed unless there is good reason not to;
- great care must be taken and disposable gloves worn at all times when handling carcasses;
- take the first bag and:
  - roll it down three-quarters;
  - carefully place the carcass inside;
  - unroll the bag;
  - “goose-neck” the bag (a “goose-neck” is formed by making a ring around the top of the bag with one hand and then pulling the neck of the bag through the ring to make the neck of the bag as thin and long as possible, then twist it like a rope);
  - either knot the “goose-neck” or tie it with PVC tape or strong string.
- the first bag must then be placed in the second
- the second bag is then “goose-necked” and either knotted or tied
- gloves must be disposed of in accordance with local Clinical Waste Disposal Instructions
- attach a label to the outer bag (see below).

Following the above procedures will help avoid possible aerosol transmission of bacteria from carcasses.

A label should be attached to the bag indicating it is a badger for collection and disposal as category 1 waste.

## Storage

Bagged carcasses must be stored on site pending collection. Alternatively, collection points could be established but these would need to be approved under ABP rules as an intermediate site (transporting the badger carcasses to such a site would also need to be done under ABP rules on transport). The cost of meeting the required standards for this needs to be taken into account.

The length of time a carcass can be stored requires judgement as it is dependent on several factors such as the season and the appropriateness of the storage conditions (e.g. refrigeration and protection against vermin). A carcass must be in a condition that a collector will accept. Carcasses must not be stored outdoors or where scavengers such as foxes, dogs or rats could have access to them.

## Collection

Collection could be done as part of the National Fallen Stock Scheme (NFSS) or by an alternative collector within the normal collecting arrangements for other fallen stock. As badger carcasses would be Category 1 material, all material collected as part of this round will be classed as Category 1 material. The Animal By-Products Regulations prohibit bringing ABPs on to any premises where livestock is kept. Therefore carcasses must not be removed from a vehicle collecting other ABPs from other premises.

## Incineration

Once Category 1 ABPs have been collected, they must go to Category 1 approved renderers or incinerators either directly or via Category 1 intermediate plants. Incinerators and rendering plants can be found on the Animal Health website at:

<http://animalhealth.defra.gov.uk/managing-disease/animalbyproducts/premises.htm>

## Risks of infection

In theory all waste material arising from the operation (such as splatter) will be Category 1 material. However, judgement is required to ensure proportionate effort and costs. Guidance can be provided for operators on bio-security and disinfection.

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Care should be taken to deal with any blood and other carcass debris that may be left within the trap or on the ground after shooting. As much potentially infected material as possible should be bagged up with the badger. Any debris left should be well covered by soil (at least 3 inches/ 8cm).

### **Cleansing & disinfection of Equipment**

Traps must be cleansed and disinfected before being moved to another sett/ site and special care should be given to those that have had badgers shot in them.

- **Under no circumstances should traps move from farm to farm without prior cleansing & disinfection.**
- Once all organic material has been removed, the traps must be disinfected with an appropriate disinfectant.
- Following disinfection, the traps should be rinsed with clean water to remove the smell of the disinfectant which might deter badgers from entering the traps.

If equipment is to be used on more than one farm, then before moving to the next farm equipment which might transfer disease, such as boots and the wheels/ undersides of vehicles, must be cleaned of biological material (soil etc) and then disinfected with an appropriate disinfectant. To remove the smell of disinfectant which might be detected by badgers, a final rinsing with clean water is recommended.

### **Other waste**

All clinical waste (e.g. used gloves) must be collected and disposed of in a designated bag which must be returned to a pre-determined disposal point for final disposal.

### **Other issues**

#### **Monitoring of sett activity and closure of inactive setts**

For the purpose of disease control, as long as densities are sufficiently reduced, it is not generally necessary or cost effective to remove every last badger. Culling which is detrimental to the survival of the local population is prohibited under the Bern Convention and there will be upper limits on the number of badgers that can be taken in a licenced area. It is therefore expected that badger activity will continue in culled areas, albeit at lower levels.

Monitoring sett activity will help to provide an indication of the effectiveness of the control operation and whether further control at a particular site (within the 6 week period) would be appropriate. It may also be useful in ensuring that badgers are not completely eradicated from the local area. Any such monitoring must not involve interference with a badger sett, such as obstruction or damage to the sett. However, the placing of small amounts of debris (e.g. twigs, straw) across sett entrances, in such a way that they can easily be displaced by any badgers going in or out, is not considered to require a licence and will provide a useful indication of which entrances continue to be used by badgers.

It must not be assumed that because control has been carried out near a sett, the sett is no longer occupied and can therefore be closed down. In the Randomised Badger Culling Trial it was estimated that cage-trapping removed, on average, about 70% of the local badger population. It is therefore quite likely that some badgers will remain in an area following trapping and also following controlled shooting. As long as a sett displays signs that indicate current use by a badger, it is protected under the Protection of Badgers Act 1992 and must not be interfered with without a licence.

### **Health and Safety**

An appropriate risk assessment should be conducted before any shooting is carried out and counter measures put in place to ensure safety of all involved in the operation. These should include measures to minimise risk of exposure to potentially infective material, use of appropriate protective clothing and other measures where risk of exposure is identified, measures to avoid injury from handling badgers, as well as risks of using firearms. Relevant shooting organisations should be able to provide appropriate information on safe firearms handling.

### **Record keeping**

Certain information will be required in order to complete the licence return to Natural England. In addition, it is best practice to record on a daily basis what has been done, where and by whom. Day-to-day details of the control operation should be recorded by the licensed operator in a field notebook. Periodically, field notes will need to be passed to the licence coordinator to enable him/her to complete the necessary licence returns. It is vital, therefore, that adequate and accurate information is recorded.



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Records must include farm/site name, location, number of trapping teams and trapping nights undertaken, and the actual location at which each badger was trapped. Trapping locations should be recorded as a six figure Ordnance Survey grid reference – e.g. in the format SX789456. Grid references can be found by checking the location on a 1:50,000 or 1:25,000 Ordnance Survey map of the area, and following the instructions on the map for recording a grid reference, or by using a hand held GPS device. Farm or holding locations can be recorded as a four figure grid reference (e.g. the equivalent 4 figure reference identifying the kilometre square in which the 6 figure example given above is found, would be SX7845).

This information is likely to be sensitive so care must be taken not to lose field note books or leave them unattended (e.g. in unlocked vehicles).

## **Annex 1: summary of overall procedure**

1. Draft badger control plan (and other aspects such as H&S risk assessment) and coordinate with other applicants.
2. Plan number of traps/ people/ frangible shot etc needed, based on number of setts/badgers.
3. Arrange appropriate training.
4. Apply for appropriate licences from Natural England.
5. Obtain traps/ frangible ammunition/ shotguns and other equipment.
6. Notify local police of intended operations.
7. If licence issued, place traps and pre-bait in accordance with the licence and the agreed Badger Control Plan.
8. Set traps to catch.
9. Inspect traps and deal with any animals caught.
10. At end of trapping session, if traps are to be moved to another site or stored, clean and disinfect them.
11. Continue to monitor for signs of badgers at setts.

## **Annex 2: Summary of dealing with animals caught**

1. On inspection of traps deal with any non-target captures as appropriate.
2. Decide which badgers to prioritise dealing with, based on exposure/welfare considerations, etc.
3. For each badger to be despatched, make all necessary safety checks, ensure animal is in a suitable position for despatch and take shot.
4. Check shot on target and make preliminary checks for signs of life.
5. If badger appears dead proceed to deal with next animal. If not, make further checks or take second shot as appropriate.
6. When all animals for despatch have been killed, unload and store the gun in a safe place.
7. Following final checks for death, bag and label each badger in turn.
8. Record all relevant details in field notebook.
9. Cleanse and disinfect equipment as necessary.
10. Remove carcasses and store/dispose of appropriately.