Rifles & Ammunition(1)

Aim

The aim of this guide is to describe the factors to be considered when choosing a rifle and ammunition combination to shoot deer in Scotland. This guide will specifically cover:

- The legal limitations on what firearms can be used;
- A description of why expanding ammunition is required to shoot deer;
- Bullet trajectory, drop and the effects of wind.

Legal limitations

For the killing or taking of deer in Scotland, firearms, ammunition and sights must conform to requirements laid down in the Deer (Firearms etc.)(Scotland) Order1985. These are stated as follows:

1. Rifles:

Deer Species	Min bullet weight	Min muzzle velocity	Min muzzle energy
for all species	*100 grains (6.48grams)*	*2,450 ft/sec (746.76 mtrs/sec)*	*1,750 foot pounds (2,373 joules)*
for Roe only	*50 grains (3.24grams)*	*2,450 ft/sec (746.76 mtrs/sec)*	*1,000 foot pounds (1,356 joules)*

NB. Ensure that all three minimum conditions are met for your chosen calibre of rifle

1. Rifle bullets must be of an expanding type designed to deform in a predictable manner.
1. Shotguns:
   Use is limited to certain circumstances‡ and must be of not less than 12 bore gauge.

Deer species	Non spherical rifled slug	Shot size	Weight of shot
for all species	*380 grains (24.62 g)*	*SSG i.e. no less than 0.268 inches (6.81 mm) in diameter*	*at least 550 grains (35.64 g)*
for Roe only	*380 grains (24.62 g)*	*AAA i.e. no less than 0.203 inches (5.16 mm) in diameter*	*at least 450 grains (29.16 g)*

1. It is lawful to use a slaughtering instrument using any ammunition intended for use in it. A 'slaughtering instrument' is a firearm specifically designed or adapted for the instantaneous slaughter of animals or for the instantaneous stunning of animals with a view to slaughtering them. Such an instrument may be appropriate for use in capture for culling operations.*
1. Any firearm or other method of humane dispatch may be used to prevent suffering to injured or wounded deer.
1. It is illegal to use sights that are:
   - Light intensifying;
   - Heat sensitive; or
   - Other special sighting devices for night shooting.

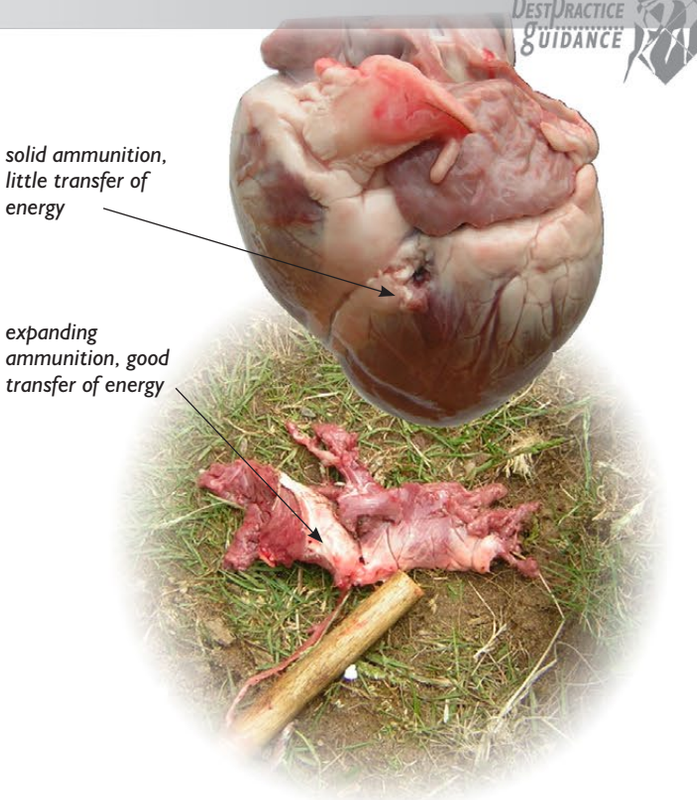
‡The use of a shot gun for the killing or taking of deer in Scotland is restricted to occupiers of agricultural land or of enclosed woodlands and other classes of person authorised by them for the purpose of preventing serious damage to crops, pasture, trees or human or animal foodstuffs

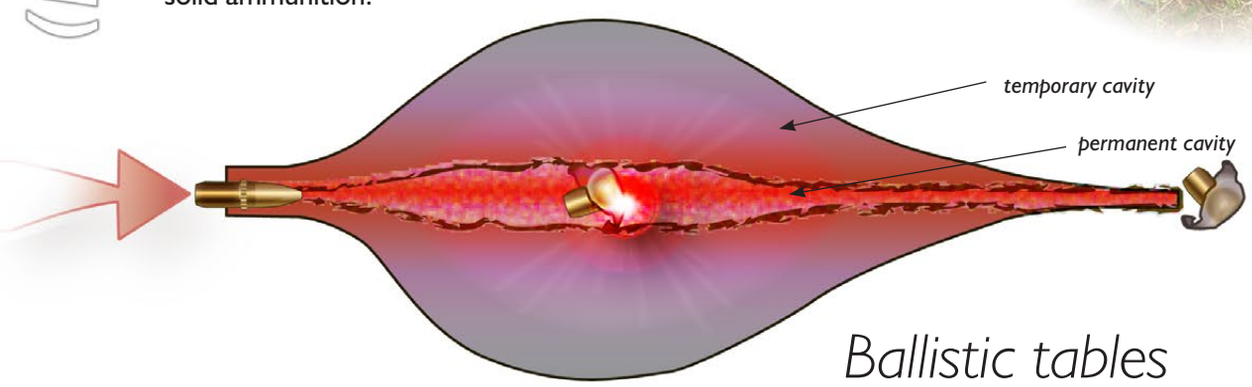
Why use expanding ammunition?

The severity of a bullet wound is directly related to damage caused by the path of the bullet and the amount of kinetic energy that is transferred from the bullet to the tissues of the body.

Extent of damage to heart shot with solid non-expanding or expanding ammunition.

The path of the bullet through tissue can be categorised into the permanent and temporary wound cavity (see diagrams below).
Expanding ammunition increases the rate at which the energy transfer takes place and will create larger and more predictable permanent wound cavities than solid ammunition.



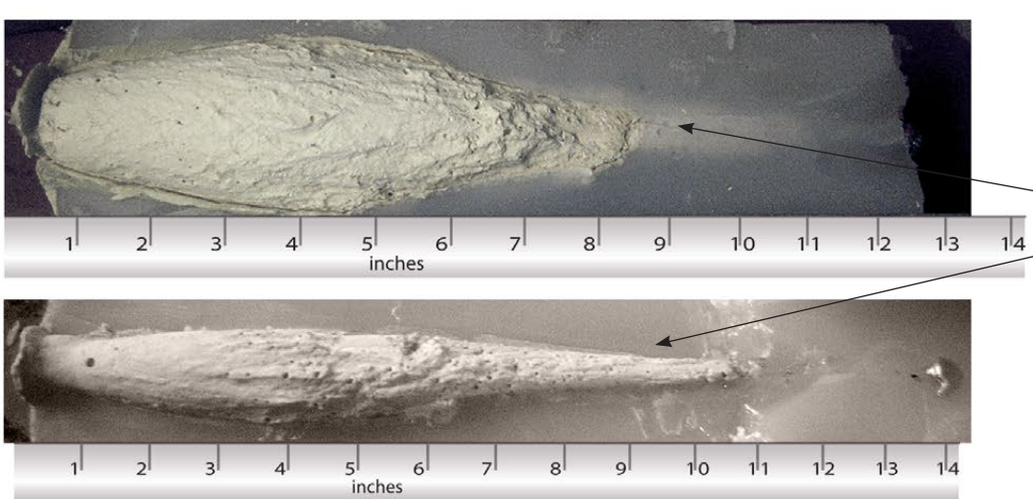


The temporary wound tract is where the expansion of the bullet causes a temporary elastic expansion of the tissue. The contribution of the shock to death is when the elastic limit of the tissue is overcome and permanent damage results.

(above) expanding bullet before and after impact

Ballistic tables

Ballistic tables will ensure you are aware of the technical capabilities of your rifle ammunition combination. These tables can be generated either by using the information provided on the manufacturer's box or through the use of commercially available ballistic software.



Permanent wound cavity with plaster cast of permanent wound tract being taken. The same rifle/ammunition was used to produce these 'wound tracts'.

wound tract 1

wound tract 2

Wound tract 2 was shot at 4 times the range of wound tract 1.
The bullet shot at longer range was therefore going much slower and resulted in slower expansion and a significantly smaller wound tract.

Bullets are designed to expand within a particular energy band. The difference between wound tract 1 and wound tract 2 reflects the difference that would be seen when comparing a bullet that has expanded and one that has not.

continued in Rifles & Ammunition(2)

** See BPG Capture for Management*