



Know your zone



Looking at the outcome of a rifle shot, Andrew Venables advises on what to look for when setting up a safe practice range

Last month, we looked at the fundamental principles of firearms safety – from the moment you pick up your rifle to the moment you put it away. This month I want to take a look at the way we practice as the next step in helping people enjoy safe shooting.

My experience of the way people set about sighting in or checking zero has been variable and on occasions downright dangerous. I've seen cardboard boxes placed on flat pasture, old pallets propped up on gently sloping, flinty fields and bits of plywood propped up against hedges or saplings at the woodland edge. If any of this sounds or looks familiar, you are courting disaster. However long you or your chum may have been getting away with it, stop now. These are not effective or safe backstops.

The first thing to find is a bank with a slope of at least 30 degrees and preferably made of soft earth, chalk, sand, peat, or well compacted manure. Large, old tree stumps can provide bullet stops, as can dense piles

of soft or hard wood, but don't go shooting into stacks of commercial timber waiting for haulage. On arable land, abandoned stacks of bales are often present, but be wary of big, round bales. These have centres that are softer than the outside layers and loose straw or hay does not stop bullets well, especially if dry. Big, square bales are far denser and can make an adequate barrier for small to medium calibre centrefire expanding bullets. Don't shoot bales intended for feeding livestock or any stacks at all without prior permission from the landowner. To summarise, what you are looking for is a bank that will clearly and demonstrably stop – and most likely destroy – bullets.

Have a look at your current zero area. Can you see clearly that no one is at risk around or behind where your targets are placed? Are the bullets burying themselves safely into soft ground behind the target? If you have a hard backstop like a rock face, you need at least a 55-degree slope to be certain of bullet capture without the chance of ricochet. If shooting centrefire rifles at hardened steel, rock or concrete, ensure you are at least 50 metres away with expanding bullets and 100 metres if using solid-type hunting bullets. If you are too close, bits can come back at you with enough energy to do real damage, or kill.

Twenty years ago I was testing the new Monolithic Solid Big Game bullet in .458 Win Mag. I fired at the target set against a backstop that had always served me well. Just after the report, I heard a loud whine followed by a resounding clonk. On looking four metres to my right, I saw a large, jagged hole in the corrugated iron at the back of the



Tips: Safe Practice



Field conundrum: There's a lot for the deer stalker to consider before taking the shot



Safe shots: Whether you're practising for the field or a target championship, range safety is paramount

On looking four metres to my right, I saw a large, jagged hole in the corrugated iron at the back of the shed

shed. The bullet must have hit a couple of buried rocks and was sufficiently tough not to fragment. What doesn't kill you makes you smarter.

If fired up in the air, a centrefire rifle bullet (such as .223, .243, .308 or similar) can travel 3,000-4,000 metres. If fired at a shallow angle at hard ground, the bullet can ricochet 2,000 metres after initial impact. Large, full metal jacket bullets may be the worst in this regard, while light, high velocity, expanding rounds are less likely to ricochet. However, they all present risks we must account for. Go onto Google Earth and see what lies up to 2,000 metres behind your current or planned zero area. Even if you believe you have 100 per cent bullet capture, be certain you don't load while the barrel is pointing over the backstop.

Thought of as a short-range round, a .22 rimfire bullet can travel 1,600 metres if fired in the air at 40 degrees. My Nightforce Ballistics programme tells me a 40-grain HV bullet still has 12ft/lb energy at 850 metres, thus hitting with enough force to penetrate a human skull. In a tragic case in Ireland a few years ago, a small child was killed in a playground by a .22 rimfire bullet fired from 600 metres away. It ricocheted off a field where a farmer was trying to scare rooks away. A thoughtless moment can kill, changing lives and laws. Whatever you do, don't shoot rimfire or centrefire rifles at things in trees with sky behind them. This is what air rifles and shotguns are for.

In our work at WMS, we look into what materials different bullets can penetrate. Regular .308 150-grain soft point stalking ammunition will penetrate a 10mm mild steel plate completely, which makes the people hiding behind car doors and tables in the movies look silly. This ammo will also go through at least 350mm of soft wood, 250mm of hardwood and all species of UK deer broadside – if it doesn't hit major bones. In most cases they will exit with at least 25 per cent of their initial energy (around 500ft/lbs in

a typical, deer-legal calibre starting with around 2,000ft/lb of energy or more).

Whatever you are shooting at, if you keep shooting at the same place the rounds may eventually burrow through and blast out the other side. A Birmingham rifle maker used to test-fire big game rifles into a miniature tunnel range at the back of his workshop. The owner was visited one day by a police constable who politely enquired why the fish and chip shop across the street at the back had a bullet hole in the window. In the sixties you just got "ticked off" for this.

Another vital issue to consider is whether you can see what is around and behind your impact. Look at the target you have set up, extend your arms and hold your fists together with thumbs touching and your little fingers bracketing the target. The area between your fingers in front, to the sides and behind the target is your danger area, according to MOD information on field firing ranges. Can walkers, mountain bikers, horse riders or livestock get into the danger area without you seeing them first? If so, don't fire a shot, and find a safer place. ■



Ricochet riot: Be careful to select the field you shoot over – stony or rocky ground will present more danger of ricochets