

# Shooting Tips

## Shooting

With CUSBC you will shoot with a small-bore target rifle over a range of 25yards. Small-bore rifles shoot a .22 inch diameter bullet and are single shot, breech loading rifles. Most of the shooting we do is prone (i.e. laying down) although later in the year there is the opportunity to shoot standing and kneeling.

During the year CUSBC has teams shooting in the Cambridgeshire leagues and BUCS competitions. Towards the end of the season (around February time) we have a few annual “shoulder to shoulder” matches. One against Greshams school, which acts as a good warm up for the important varsity match against Oxford, held in London. Don't worry if you don't make the team for the varsity match because we have a second team match against Oxford as well as a three position match (Prone, Kneeling, Standing). Failing all that there are club trophies to be contested for best novice, best shot, etc.

To help you win some of the silverware available below is a basic guide to target rifle shooting courtesy of Chris Haley. Have a read and put the bullets through the middle of the target.

## Target Rifle Shooting – The Basics

This page is intended to outline the basic principles of marksmanship. Since it does not deal with the rifle itself, with safety issues, or with range orders, you must ensure that you are familiar with these other subjects before firing.

### The Basic Principle

The fundamental principle of shooting is **repeatability**.

It is not necessarily about pointing the rifle at the middle of the target. Provided that whatever you do can be **repeated consistently**, it doesn't actually matter where you aim! If you perform exactly the same actions for each shot (and if the rifle and ammunition are good), then the shots will hit the same place on the target, and one can then adjust the sights until the mean point of impact is in the bull.

Learning to shoot is primarily about learning which techniques will enable consistent repeatability.

## Position

It is obviously desirable for the rifle to be firm and steady when fired, and the aim of a good position is to support the rifle on a *stable platform* which has three point of contact with the ground (left elbow, right elbow and chest).

However, where the shot falls depends not only upon where it was pointing when the trigger was pulled, but also on *how the rifle recoils*. If your muscles are tense, the rifle will recoil in a different fashion than if they are relaxed, and hence the shot will fall in a slightly different location.

Since it is impossible to tense your muscles consistently, the only solution is to make sure that you are entirely relaxed for each and every shot. When you pull the trigger, the only muscle which should be doing work is your trigger finger. In practice, this can be harder than it seems, and somewhat paradoxically, you will need to *make a conscious effort to relax completely*.

If you are to be entirely relaxed, then this also means that the rifle must be naturally pointing at the target before you take the shot – if not, you will be using muscles in order to move the rifle onto the target. This is achieved by adjusting the rifle (hand-stop, etc.), sling and your own position until you are *naturally pointing at the target with no effort*. Test this by closing your eyes for a few seconds, consciously relaxing your whole body, and then checking whether you are pointing at same place when you open your eyes.

A good position should feel comfortable. It may take many months to develop, and is largely a process of trial and error. However, there are a few things which will help (everything mirror image for left handers):



- **Left elbow** – your left arm should be in line with your left leg and spine. The left elbow takes the majority of your weight and should be approximately under the sling; if it is too far to one side, you will feel the rifle falling to the other side. It should also be placed quite far forwards, since

otherwise your position will be too high. *Your left elbow is the pivotal point of your position:* once you are settled, do not move it during the shoot.

- **Sling** – this is used to take the weight of the rifle, so that your left arm is completely relaxed. It should be positioned high up the left arm – if it slips down, your elevation will change, and it may also press on an artery, transmitting a pulse. (You can take up slack in the jacket by pulling on the sling before you lie down, so it doesn't slip as you shoot).
- **Left hand** – for stability, the rifle should rest on the heel and wrist of your left hand, rather than the fingers. If this is so, your left fingers will be higher than your thumb. *Do not grip the rifle.* The sling should pass under the back of your hand, over the cuff of your glove, which should be roughly 6 inches from the floor. Bulky wristwatches should be removed.
- **Right hand** – whilst it is OK to grip lightly with the right hand, it should not push the rifle sideways. Check this by removing your right hand and seeing whether you still point in the same place. (A common mistake is to move the rifle to the right hand, rather than the right hand to the rifle. After loading, hold the rifle with your right hand before you put the right elbow back down).
- **Right shoulder** – make sure that you are not pushing this forward to make contact with the butt, or that the butt is pushing it unnaturally far backwards. If so, adjust the handstop.
- **Spine** – your spine should be straight, pointing at a slight angle to the right of the target.
- **Legs** – most shooters keep their left leg straight, in line with their left arm and left hand side of their body, whilst bending their right knee. This raises the chest off the floor, so that breathing doesn't disturb their position so much. Normally, both feet will point to the right.
- **Head** – ideally, your head should remain vertical rather than tilted. Your cheek should rest on the rifle so that you can see through the sights without straining. The distance to the rear sight (eye relief) should be consistent – normally a couple of inches. Try moving the rear sight or raising the cheek with some padding if you have problems. Depending upon the shape of the stock, you may be able achieve a consistent head position by making contact with your right thumb.

## Trigger Release

After the round is struck by the firing pin, it takes a few milliseconds before the bullet exits the barrel. Although this doesn't sound like much time, your actions during this period will affect the fall of shot.

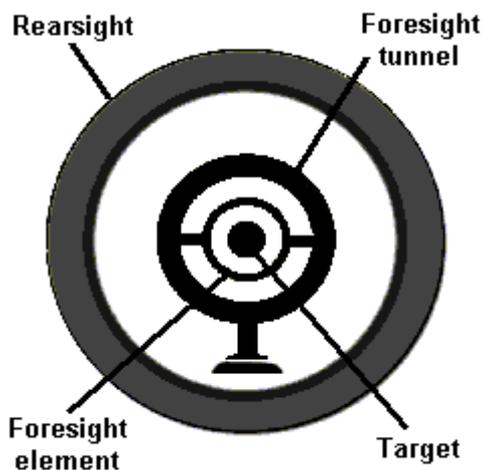
Your trigger pull should therefore be smooth and controlled – a gradual application of pressure, rather than a sudden jerk, so that the shot comes almost as a surprise. You should use the pad of your finger

and try to pull straight back towards your body, rather than to the side. Avoid touching the stock or trigger guard with your trigger finger.

Exaggerate the follow-through: keep hold of the trigger, and keep looking at the target for a second or two after the shot (this is also a useful check of your natural alignment; with a good position, the rifle should settle back onto the target after recoiling). Do not flinch or tense your shoulder as you fire.

## Sighting

Having said that it doesn't matter where you aim, you will find it much easier to aim consistently at the middle, than, say, 6 inches above the target. The ideal sight picture will thus be a series of concentric circles – rear sight aperture, foresight tunnel, foresight aperture and circular target:



Be aware that you must centre the foresight within the rear sight. Whilst this sounds obvious, it is very easy to look through the rear sight and forget about it. If you do not align the two sights, then adjusting them will have no effect.

Your eyes may be able to accommodate both foresight and the target spot, so that both will appear in focus at the same time. As you get older, this becomes increasingly difficult, in which case you should *focus upon the foresight element*, rather than the target – it is much easier to centre a fuzzy circle within a sharp ring than the other way round.

You should also avoid staring at the target, since after a few seconds your brain stops registering the small changes, and you will be fooled into thinking that the picture is better than it really is. *The early sight picture is always the most accurate*. If you have not taken the shot within a few seconds, you should therefore look away from the target – at the ground in front of you, for instance – and then back again.

Use a blinder for your left eye, so that you can keep both eyes open. Beware *canting* – tilting the rifle to one side – by checking that the bar in the foresight element is horizontal.

## **Breathing**

For stability, you will need to stop breathing whilst you take the shot. Since you can empty your lungs more consistently than filling them, you should exhale before the shot (only as normal; not as if you're using a breathalyser!). A couple of slow breaths before this will help you relax and give you enough oxygen for 8-10 seconds. If you have not taken the shot by then, breathe in and start again – never feel rushed into taking the shot.

## **General Remarks**

Try to develop a rhythm when you are shooting – that is, a steady cycle of actions for each shot. Similarly, you should aim for consistency not just between shots but also between shoots: this means recording positional changes, making notes about your equipment, etc. When a shoot goes well, take the time to note how your position feels before you stand up.

Finally, be aware that good physical control requires good mental control. Shut out irrelevant and negative thoughts whilst you are shooting, and try to visualise the perfect shot. Do not underestimate the power of positive thinking!

With thanks to C D Haley, July 2002