Dear Colleagues

**Balancing the weight of rifle and arm upon a single elbow**

**The problem:** rifle shooters consider the rifle support technique they use enables them to hold the rifle dead still, with no discernible movement of the foresight or telescope element. That is, they consider they are able to hold the foresight or scope element dead still right to the fraction of a second when release occurs. Hence, this discussion also concerns F Class as well as TR shooters, because although there is no need for a sling, a shot must still be released without disturbing the aim.

Unfortunately, most TR shooters are only concerned whether the foresight is still at the moment of shot release. Up to that time the foresight is often seen to move considerably because the shooter’s position is not able to support the rifle dead still for a long time. It is also known that there is a need to ensure the rifle is dead still right up to the moment of release, without the mind silently slipping forward to the next thing it expects to focus upon, e.g.to reload and to turn the head to look at the electronic screen.

An observer watching a TR shooter will obtain a clear indication that the rifle is not being held dead still. If close enough, the observer may watch the end of the muzzle and actually see minute movements measured against grass growing on the firing point. The most obvious indication is however the extent of movement of the rifle barrel when unloading and reloading. Most shooters appear to wave the barrel around the countryside, from the ground in front to the sky above and finally when reloaded, it is returned to point at the target. Other shooters will be observed supporting the rifle quite still, using the finger-tips to open the bolt and extract the empty case, then gently drop the next round into the chamber and close the bolt with the finger-tips, finally resuming the aim without moving the butt from the shoulder.

The question arises: what is going on here? A shooter appears to support a rifle dead still, then load it effortlessly with finger-tip control, while another is barely able to hold the rifle still enough to release a shot accurately. When reloading, the latter shooter is only able to do this upon exerting a lot of force and waving the rifle around. Furthermore, this shooter appears to also cause his/her pivotal elbow to move slightly and thereby change the natural point of aim. This leads to a split group.

**Discussion:**many shooters consider the means of supporting the rifle dead still depends upon a particular sling design. They consider the differences in shooting styles:

* without a sling (balancing on both elbows)
* with a sling around the back that links the rifle to each arm (balancing on both elbows)
* a Norwegian sling design which is not connected to the rifle and links only the forearm and upper arm (pivoting upon one elbow)
* using the single-point sling, linking the upper arm and forearm, connected to the rifle at one point (pivoting upon one elbow) t
* using the double-point sling, linking the upper arm and forearm, connected to the rifle at two points (pivoting upon one elbow).

The first of these techniques was taught by armies around the world that considered there was no opportunity for a soldier to spend time assembling a sling to achieve a dead still rifle. The writer had considerable experience with this shooting style and can verify that a 2 MOA group was still achievable without a sling up to 200m. This satisfied most shooting situations in warfare.

The second technique utilised a sling that enable both elbows to be locked into position and not spread outwards. In the 1920s and 1930s it was so popular, that the advantage was considered to take rifle shooting too far from the model acceptable to the armies of the British Empire, which after all provided rifle ranges and ammunition free of cost. It was disallowed.

The Norwegian sling design departed completely from the above, enabling the shooter to utilize a single elbow as fulcrum or pivot, upon which to balance the rifle and supporting arm. Likewise, the single- and double-point slings also relied upon a single elbow as pivot.

The principal difficulty experienced by perhaps 90 percent of rifle shooters, is their non-realisation of the need to balance upon a single elbow, i.e. all muscles involved in supporting the weight of the rifle and arm need to be supported upon one elbow. That meant that if the weight were unevenly spread across both elbows, then some muscles would be utilized under tension. Such tension resulting from unsupported muscles is responsible for minute movements of the foresight. HenceThat is, if a balance is not achieved across a single elbow, then a shooter cannot support the rifle dead-still. Minute movements will still occur, which the shooter has a need to always be careful to prevent at the moment of release. Hence, this shooter will observe a movement occuringr, which allows a shot to be seen when it is likely to be well out of the bullseye.

On the other hand, many TR shooters who manage to balance upon a single elbow and support the rifle dead still, find they can actually group within the X-ring, i.e. group within half the diameter of the V-bull!

**Practice:**shooters who use either the single- or double-point sling manage to balance their whole shooting position upon a single elbow by following the sequence:

* while prone on the firing point, with the right leg (of a RH shooter) parallel to a line between the target and rifle, the shooter imagine a dotted line between the eye and the target. He/she positions the left elbow well out in front of the head, i.e. under the dotted line
* place the right thumb against the butt plate and lever it against the shoulder in the manner of a shoe-horn
* look through the aperture and note that the rifle is pointed at the sky to high left
* move the left foot a cm or so to bring the foresight to the right and in line with the target
* move the navel forward a cm or so to bring the foresight down onto the target
* look down at the left elbow and note that it is directly underneath the rifle and not out to the left
* very carefully keep the left elbow in that exact position for every shot of the shoot
* if there is any reason to move the elbow then it must be assumed that a change of the natural point of aim has occurred
* if the elbow has moved, then before continuing the shoot, aim the rifle with the eye half-closed, to determine the natural point of aimand correct it with the leg and navel as above.

**Conclusion:**a shooter using either the single- or double-point sling, may support the rifle dead still by balancing the entire arm and rifle on a single elbow. When this is achieved the shooter is able to unload with the fingertips with the barrel barely moving from the target. Reloading may then involve raising the right elbow and repositioning it, without concern as to whether it is balanced or not – because balancing that elbow is not required.

Best regards

Geoff