

**"SMOKE SIGNALS "**  
***Blackpowder Muzzleloading***  
***By; Andre ( Graywolf ) Reed***  
***Light Effects;***

One of the most misunderstood aspects of shooting is the sun and it's effects on the target and sights.

***Optical Illusions;***

Two shooters will view the same optical illusion and see it differently, this is called perspective, for once you have explained it they can see what you see.

***Target;***

The optical illusion that the sun has on the target to some shooters appears the black bull is larger than actual size, while to others it appears smaller than actual size. If the prevailing light conditions causes the target to appear larger, the correct sight picture (six o'clock hold) will cause your shots to go low. The illusion of a smaller than normal target will cause your shots to be high.

Both illusions can be handled by using a centre hold.

Centre of mass is centre of mass.

The sun striking the right side of the target will wash out the right side of the black bull making it egg shaped, this will cause your shots be left of centre. The sun striking the left side of the target will cause your shots to be right of centre. With overhead sunlight on the target your shots will be low of centre. At a range I shoot at, the targets are hung under an overhanging baffle and on a sunny day my shots are high, as the top of the target is shaded, the bottom of the black bull is washed out.

***Sights;***

When the sun is striking the right side of your front sight post up to 25% of the post is washed out and as the shooter centres this reduced post in the back sight notch, the shots will all hit the target right of centre. The reverse is true if the sun is on the left.

Another illusion is when the sun is directly over head, the sun has washed out the top of the front post, as the shooter levels this shortened post in the rear sight notch all the shots go high to centre.

You can minimise both these illusions by blacking the sights.

***Mirage;***

A mirage is nothing more than heat waves coming off a heat source, usually in shooting a barrel or the ground. On a hot day or barrel you can see the heat waves moving across the surface. This is a mirage. The wind affects these heat waves causing them to move on the barrel, you will find it difficult to focus on the front sight until the effect has dissipated. Mounting the front and rear sights high on the barrel will minimize the effects. On the ground you can use the movement of the heat waves to determine the strength and direction of the wind. If the wind is not blowing the heat waves will rise straight up. If the waves move from side to side the wind is moving toward or away from you. The waves move in the direction the wind is blowing.

Now that your ready to place your shot clouds pass in front of the sun just to cause you more trouble, remember the rule of thumb.

***Lights up, Sights up: Lights down, Sights down.***