

## **MORE SHOOTING FUNDAMENTALS**

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The Sights. For a biathlon rifle to be accurate it is necessary that the sights are rugged and firmly attached to the rifle. The winter biathlon front sight should have a cover to keep out the snow in the event of falls or falling snow. Every front sight should have a selection of changeable and different sized apertures (sight circles). Front aperture sizes are changed depending upon the acuity of the shooter's eyes and the amount of light to be let through. The amount of light passing through the front sight has a definite affect on the sharpness of the bullseye. Cloudy, foggy days will require a larger front sight aperture for the bullseye to be clear.

Most front sight apertures are measured in millimeters. A front sight aperture of 3.4 to 4.0 mm is the size that is used by most national level competitive shooters and biathletes. A rule of thumb would be for the aperture to be large enough that you can see a large line of white around the bullseye. The most common sighting error for novice biathletes is in choosing too small an aperture.

The rear sights should be rugged and detachable. Again for the winter biathlon gun these should have a cover to keep out the snow. The rear sight should have several mounting positions in order to be able to adjust it for proper eye relief (the distance from the eye). The sight normally would be from one to two inches from the eye when the rifle is placed on the shoulder in both the prone and standing positions. Never rest the eyebrow against the sight. Even the slightest recoil can cause a reflexive flinch, which will cause the bullet strike on the target to be erratic.

The rear sight should make a positive movement when adjusted. These adjustments should be consistent for every click of movement both in elevation and windage. Most rifles made in Europe will have sights, which move 1/6th of a minute with each click. American sights have either 1/4 or 1/8 minute clicks. This means that each click of windage or elevation will move the strike of the bullet 1/4, 1/6, or 1/8 of an inch at one hundred yards. Or to phrase it another way, four, six, or eight clicks will move the strike of the bullet one-inch at one hundred yards.

However, remember that biathletes shoot at 25 yards or 50 meters. Thus it will take four times as many clicks to move the strike of the bullet one-inch at 25 yards and twice as many clicks to move one inch at 50 meters. Thus with an Anschutz rifle 24 clicks will be needed to move the bullet one inch at 25 yards and 12 clicks will be needed at 50 meters. Most shooters take too few clicks when adjusting their sights. Be bold in adjustments. A near hit on one side of the bullseye counts just as much as a near hit on the other side.

Always check for backlash in the sights. This unwanted condition is when the sight does not respond for several clicks when the sight is turned in a reverse direction. The shooter can have the sights checked with a micrometer or can fire perfect shots from a prone rest while making one click adjustments in one direction for five or ten shots, then raising the elevation for twelve clicks and then firing the same number of shots while turning the windage knob one click per shot in the opposite direction. The shots should hit the paper exactly above each other. Be sure the wind is constant during this exercise. The micrometer test is more valid.

The rear sight also should have an adjustable aperture to vary the amount of light passing through. This also has a distinct effect on the sharpness of bullseye. Most rifles come with a fixed rear aperture. This will do for most summer biathletes if they can adjust the front aperture.

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