

Shooting Clinic, Alaska Biathlon – Anchorage

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Session 3: Fundamentals, Position Details

A. Fundamental Steps

1. The sequence of six steps for a well-aimed shot needs to be accomplished for **each** live fire or dry fire shot,

- you need to be conscious of how the well-aimed shot is to be accomplished correctly and fix that in your mind, creating a memory of how each aspect, each detail, is to be accomplished,

- pay particular attention to doing the steps the same each time; you will need to think about them when first learning the procedures,

- after many repetitions you won't need to think about how to accomplish the basic sequence because it will be automatic (similar to learning to drive a car or ski: at first you're thinking about what to do constantly; later on, after you are more experienced, you don't need to think about how to do it),

- each repetition of the basic shooting sequence steps should be accomplished with 'in the zone' focus on each step for each shot, your mental discipline eliminating conscious awareness and interference from outside influences; essentially, mental 'blindness',

2. Creating a memory

- for the fundamental process steps to become a reflex (fixed in the mind, not requiring conscious thought), a memory of what it feels like (muscle memory) to get into or change position, control breathing, squeeze the trigger, or get out of position must be created (remember, however, that after getting into position the primary support of the rifle is provided by bones rather than contracted muscles),

- creating the memory requires performing the fundamental steps and any other actions you want to become a conditioned reflex repeatedly (think of rats conditioned to do tasks in a lab experiment); basically, only two methods can provide the number of repetitions required to accomplish this, dry firing and visualization,

- dry firing reproduces all aspects of live firing except of course no live ammunition is placed in any magazine used or in the rifle chamber (any magazine used must be checked carefully to make sure it does not contain bullets), and most of the time it also should include the actions that take place on the mat preceding and following the shooting bout,

- dry firing can be done in front of a mirror to observe details of your position, or a few feet from a wall on which you've taped a dry fire target that has a small dot to aim at (you can dry

fire at the range when it is not open also, and it is a good idea to start any session at a range opening with several minutes of dry firing before you commence live firing),

- dry firing sessions can be a mixture of repetitions of the six step shooting process, the entire sequence from arrival at the firing point to departure, multiples of one aspect (e.g., breathing cadence, trigger squeeze), or holding your position for several minutes,

- mentally visualizing the range procedure and shooting process to help them become fixed in your mind can be done anywhere, and involves thinking through the various steps without being actively aware of other activities going on around you (“in the zone”); obviously it should be easier to accomplish this process where distractions are reduced, but with practice you should be able to do this regardless of what sort of activities are taking place around you,

- some competitors have found this to be a useful exercise during a race, focusing on, for example, good sight picture attributes as they approach the range for their next shooting bout by visualizing concentric circles with even centering,

- the difference between serious competitors, for whom the shooting sequence has become a reflex action, and others participating in biathlon usually boils down to a willingness of the former to devote substantial time to dry firing and visualization.

3. Competition

- early in your biathlon experience you probably have realized that you can't expect to become competitive at a higher level just by showing up at one range opening session per week; the many repetitions needed to fix the fundamental range and shooting procedures in mind so they can be accomplished accurately and efficiently without thought are possible only by making room in your daily schedule for dry firing and visualization sessions,

- like most practice routines that involve some effort, getting in the habit of dry firing may seem an almost insurmountable task given all the demands on your time; a suggestion that can pay big dividends—resolve to dedicate 10-15 minutes/day for the next 10 days, and then see if it isn't easier to make this a part of your daily routine (hint: don't make it the last thing you do before turning in).

B. Positions

1. Rifle fit: when you are satisfied with how your rifle is adjusted, it's a good idea to record the locations etc. in your shooting diary (refer to session 5 for notes on diary) and/or mark the adjustments (if it's your personal rifle, or use tape for marking if not) such as number and type of butt and cheek piece spacers, butt hook location, size of front sight aperture, handstop location, sling adjustment, sight location, so if you make adjustments in the future and don't record them you can return to this starting point; most of these will need adjustment if you are still growing,

2. Hold: your hold may not be perfect but should be the best you can do in either position; compensate for movement with good trigger control; in standing position, you just need to place the target somewhere within the front aperture,

3. Definition of 'good shot': even if your shot does not strike the hit area of the target, if you can call it accurately, it is a good shot, i.e. "I saw what my sight picture was at the moment the rifle fired, called the shot there, and it went there"; if you called it correctly but it did not strike the hit area of the target, work on your position and other basic steps so your hold improves, and then the shot not only goes where you call it but also in the hit area of the target,

- in keeping with your efforts to accomplish the entire sequence of six fundamental steps with each shot, if you cannot say where the shot hit, even if your shot strikes the hit area of the target, it still is not considered a 'good shot' by most of those who have a long time involvement in the shooting sports because part of shooting well is being aware of what you are doing throughout the shooting sequence so you will have some basis for making changes in your position etc. that will improve your performance.

4. Standing Position

- stand with your shoulders at right angle to the target, feet about shoulder-width apart, knees not locked (locking is likely to cause muscle tension and vibration which can be transmitted to the rifle), leg muscles not contracted more than to remain standing; that is, relax or 'slump' into a comfortable position with the body positioned over the legs and feet; the object is to build a solid platform so the position aims the rifle at the target rather than the shooter (use natural point of aim),

- keep hips level: you don't want to lean back along the rifle axis so they aren't level since this would put your weight mostly on the rear leg, which is an unstable position (leaning back onto the rear leg usually is an attempt to lift the rifle up onto target if it is aiming too low--adding a spacer between your supporting hand and the trigger guard/forestock will raise the rifle without requiring any changes in your position—if you add a spacer note that the IBU limits the distance between the centerline of the barrel and the lower surface of the forestock/trigger guard, which would include this spacer, to 120 mm, so the spacer can be about the size of a box of bullets),

- to position the stock in your shoulder grasp it near the butt plate, or place your thumb on the upper part of the butt plate, and guide it into the notch formed by the collarbone and top of the upper arm bone (it should sit higher in this notch than a hunting rifle typically would be held),

- the butt hook should be in your armpit (you may want to make the hook longer so it actually does stay in that position), and be adjusted low enough on the butt plate to allow the rifle stock to be held up sufficiently high so you do not have to bend your head over very much to see through the rear sight (i.e., only the lower portion of the butt plate will be in contact with your shoulder),

- the object here is to bring the rifle up to your face rather than bending your head over until you can see through the sights; this eliminates most of the uneven strain on the neck muscles, makes it easier to consistently achieve the same position each time, and puts your eye more directly in line with the sight so you are looking through the center of the lens (area of clearest vision) rather than through an area off to the side,

- support the rifle with the left elbow (right-handed shooter) on top of the hip, or against the ribcage if you have a longer trunk or shorter upper arm; cradle the rifle forestock between 2nd

and 3rd fingers or 3rd and 4th, or with some other hand position such as up on finger tips (not quite as stable when working the bolt)--experiment with various positions,

- cheekpiece should rest comfortably under the cheek bone in a position that you can find consistently for each shooting bout,

- lean back slightly parallel to the firing line (stomach may stick out a bit) so the rifle is directly over the feet and legs,

- the right hand has a minor steadying role, so while you are in position the rifle should not move if you remove your hand from it,

- holding the rifle in the standing position is much more difficult than in prone and shots may be more difficult to call, but the sight picture is more forgiving because the target doesn't need to be perfectly centered to result in a hit, just located somewhere in the front aperture (which of course should be centered in the rear sight),

- a good exercise to improve your hold and create a memory of the position in either prone or standing is to hold the position for one to several minutes at a time; if it doesn't feel quite right, this is a good time to try adjustments (e.g., sling tightness, elbow position, leg or foot position, butt plate or hook position, rear sight location),

- hold your position until you have a good sight picture, but not so long that it begins to deteriorate, which occurs fairly quickly; when this happens, do not be afraid to release your position and start the entire sequence over again—it will add some time but be well worth it if you get a hit and avoid the penalty,

- breathing cut-off the same as prone, at the end of the exhale where there is a natural pause.

5. Prone Position

- the left arm should be as close to directly under the rifle as possible (flexed at about 90 deg), resting on the flat spot at the rear of the elbow, with the hand pressed firmly against the handstop and the four fingers extending vertically across (up) the right side of the forestock (at first this may stretch and twist the hand into a somewhat unnatural position),

- the right hand should be neutral, that is, just resting lightly on the rifle or steadying it slightly rather than gripping it; the rifle should not move if you remove your hand from it,

- the right elbow should be extended out sufficiently (start with about 45 deg) to make a solid tripod,

- the third point of your basic support tripod contacting the mat is formed by the center portion of the lower ribs; the tripod results in a solid platform that allows the position to point the rifle rather than the shooter (natural point of aim),

- most of the chest needs to be elevated off the mat so the rib cage isn't compressed and squeezing the heart and lungs between the mat and the rest of the body, which will result in the heart beat and breathing movements being transmitted up to the rifle,

- to make sure your chest is not contacting the mat, you may want to try flexing your right leg slightly which will lift the right rib cage some (of course you probably will want to try this with skis on to see if it works for you),

- the shooting cuff should be positioned above the biceps muscle, sufficiently snug so it doesn't slip down but not so tight that it compresses the large artery in the arm so the heart beat can be felt and is transmitted to the sling and rifle,

- your position should be 'tight' enough (produced by handstop location, sling length/tension, and stock length) so you must guide the butt plate of the stock into the notch of your shoulder by lifting and pushing on the butt of the rifle using your thumb placed on the upper part of the butt plate; if the sling tension is quite snug, this may require momentarily rolling up on your left side slightly (if you have to roll up significantly, your sling is too tight),

- the trigger should be contacted at the midpoint of the last forefinger joint; after taking up the easy first stage travel, squeezing directly to the rear so the rifle is not moved left or right and increasing pressure on the trigger until the rifle discharges (you probably will not be aware of when this is going to occur),

- if your group on the target stays good but tends to wander off center (assuming no significant wind changes), it likely is a result of slight changes in some aspect of your position, natural point of aim, or trigger control.