

# **Shooting Clinic, Alaska Biathlon – Anchorage**

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## **Session 1: Shooting Fundamentals**

### A. Introduction and Rationale

1. Penalty loops – how many are too many? i.e., what shooting percentage is acceptable?
2. Penalties add to your distance skied (0.15 km/penalty lap) and total time (e.g., 25-35 sec/penalty lap), and thus can affect your placement in a race.
3. Can you compensate by skiing faster? Probably not; just one miss in a sprint race means you have to ski about 10 sec faster on each of the three course laps (how will that affect your shooting?) to equal a racer who shoots clean. One miss in each shooting bout of a pursuit race (4) will require skiing 12 sec faster on each of the five course laps to equal a racer who missed only two targets, or 24 sec faster/lap to equal the competitor who shoots clean.
4. Solution? Shoot better! How is this accomplished? Repeat the same sequence of fundamental steps (position, natural point of aim, breathing, trigger control, follow through, call the shot) for each shot so they become reflex without requiring any thought!

### B. Fundamental Steps

#### 1. Position

- establish a stable shooting platform using angle of body, angle of legs, arm/elbow position, stock position, and sling,
- do not use major muscles to hold the position because the vibration resulting from contracting them will be transmitted to the rifle,
- in the prone position, the upper body should be off the ground (only the lower rib touching) so the heartbeat isn't transmitted to the rifle,
- for the standing position, “slump” into a somewhat relaxed position with the feet approximately shoulder width apart; lean the upper body back only enough to bring the rifle directly over your legs,

#### 2. Natural Point of Aim

- for each target in each shooting bout, pay attention to the following:
- settle into a relaxed prone position with the eyes closed (so you don't see the target - the brain instinctively wants you to aim at the target, so if your natural point is off target the tendency is to contract muscles to force the rifle onto the target, which causes vibration affecting your aim),

- open your eyes to check where you are aimed; if not at the target, shift your hips left or right slightly, pivoting around the left elbow (RH shooter) until your position has you naturally aiming at the target (if necessary to center the sight picture vertically on the target at the full exhale point, move hips back to move muzzle up, move hips forward to move it down),

- relax, close and then open your eyes again to confirm your aiming point,

- repeat for each target in each shooting bout until your natural point of aim automatically is at the target when you settle into position,

- remember that you can't shoot at targets spaced out across the strip without contracting muscles, causing vibration, unless you change your position slightly for each new target,

### 3. Breathing

- must stop breath at the moment of the shot to eliminate movement due to breathing,

- at the bottom of your exhale there is a natural pause before the next inhale begins (as much as 10 sec), so it is a natural place to hold steady while completing the shot,

### 4. Trigger Control

- most biathlon rifles have a two stage trigger: quickly take up the light first stage until resistance (the 2<sup>nd</sup> stage) is felt,

- you need to apply increasing pressure on trigger to fire the rifle without disturbing the sight alignment with target,

- don't want to allow the rifle to fire until the sight picture is what you want, so increasing pressure on the trigger through the second stage as you align the sight and the target brings you to near the end of the trigger travel where you can allow the trigger to fire the shot with only slight additional pressure, completing the squeeze as you achieve the desired sight picture,

- as you fire the rifle you may involuntarily close your eyes; this will result in remembering the sight picture as it was during the final trigger squeeze rather than the picture during the actual firing process; if there was any movement during this period, you won't be able to call the shot accurately since you won't know what the sight picture was at the moment of firing; it requires strong mental control to avoid closing the eyes, so you need to practice this in order to avoid not knowing if you move the rifle at the moment of firing,

### 5. Follow Through

- for a fraction of a second after the shot is fired, you should hold position, trigger pressure, and breath while the bullet clears the barrel,

- recoil causes the fired rifle to move slightly off target; it should come back onto the target as it was prior to the shot if you have not changed position, trigger pressure or breathing for a brief moment following the shot,

## 6. Call the Shot

- mentally you are trying to hit the center of the target, however this does not always occur,
- based on your sight picture as the shot is fired, you should be able to say where the bullet will hit,
- a biathlon rifle is capable of holding 1/4" groups, so larger groups are the result of the shooter's actions; groups can be tightened up by attention to the fundamental steps,

Bottom Line: Accomplish the six fundamental steps with each shot; through repetition they will become automatic and your shooting results will improve. This goal can be achieved more quickly if you dryfire 15 minutes every day.