

Shooting Clinic, Alaska Biathlon – Anchorage

25 April 2009

Instructor: Richard Barlow

Session 6: Dryfiring and Commitment, Diary, Rifle Care, Standing Position

A. Dryfiring

1. Importance of dryfiring – physical and mental

- dryfiring is the only way to provide enough repetitions of the shooting sequence steps so that all become automatic, accomplished without any conscious effort like most of the other movements you make hundreds of times every day,

- for example, if you are sitting, stand up: how did you do that? did you have to think about how to do it?

- also, practice holding your shooting position up to 5 min to create a physical and physiological “memory” of position, natural point of aim, breathing control, trigger control,

- after the memory is ingrained, you probably can feel where you might be able to improve e.g., your position, by adjusting the cheekpiece, elbow placement, etc.,

- remember, you have the same starting physical and mental capability as others who have participated in this sport, including world cup and Olympic champions,

2. Commitment

- how interested and committed are you to achieving your potential? how much time are you willing to commit to improving your shooting and accomplishing your goals? how much time for dryfiring can you make in your schedule?

3. Making the shot

- to accomplish a well-aimed shot, your mental preparation must make it hit a specific spot; desiring it to hit there is not sufficient, unless this drives your commitment and effort to accomplish the six fundamental steps for each shot,

- you must narrow your focus to what you are doing at the moment, eliminating any influence of outside activities from your consciousness,

4. Fundamental step question

- in which of the first four steps of the shooting sequence can you have some error without a major effect on your shot?

- hint: no error can be tolerated for trigger control,

- increasing pressure on the trigger results in the rifle firing; since you don't know the exact instant the trigger will cause it to fire, you must have control throughout your trigger squeeze so it will be moving smoothly during the instant it fires the rifle,

B. Shooting diary

- keep it up to date,

- add comments on each shooting bout and any general things you noticed and feel might influence future shooting,

- for reference, include a list of the 6 fundamental steps for a good shot: if you forgot to consider one or more on this shot, try to focus on them for the next shot,

- include information on your no-wind zero starting point: mark the point on windage and elevation adjusting knobs (if using a club rifle, use tape instead of more permanent marking),

- when you have a good shooting bout, record what you did that might have made it good,

- record anything you think might have had an impact on your shooting that day, including potentially distracting activities/incidents at or near the range and other shooters firing nearby,

- how did you deal with other activities/incidents that day or recent past; how might they have affected your focus and shooting? were you distracted? what was your mental state?

- record wind velocity, temperature, cloud cover (light conditions), precipitation, sun angle, and any other conditions you think might be affecting your shooting,

- record ammunition you are using for all shooting; how different brands seem to react to low temperature (group size),

- record sight settings; sight corrections you made and apparent affect they had,

B. Care of Your Rifle

1. Cleaning the rifle frequently helps maintain rifle accuracy,

2. Shot fired: burnt powder and lead are deposited in the barrel and chamber and on the face of bolt, and the pressure blast pushes it back into receiver,

3. Accuracy is diminished in proportion to the amount of residue that has accumulated,

- should clean your rifle after firing 50 (best) – 100 (maximum acceptable) rounds,

- after 100 rounds sufficient residue will build up to affect rifle accuracy,

- comparison to hunting rifle use: still can make a kill on larger target such as rabbit or moose with uncleaned rifle, but we're trying for accuracy on a small target (45mm/115mm or 1-3/4"/4-1/2") in biathlon,

4. New rifle: clean bore and chamber after each round fired (or just a few) for the first 50 rounds fired,

5. Cleaning

- using a coated rod with brush screwed into its tip: push the brush, with lead solvent liberally applied to it, from the chamber end straight through the center of the bore (use bore guide if available), then pull it all the way back and out of the chamber; do not scrub back and forth when part way through the barrel – this can cause bristles from the brush to get stuck into the inner surface of the barrel; wait a minute and then repeat,

- use a brass jag screwed into the end of the rod to push a patch with oil through the barrel; repeat until the patch comes out quite clean,

- at the beginning of your next range visit, fire five shots before shooting for accuracy to foul the bore so it is in the same condition as during your previous shooting bouts,

- if you are not going to shoot the rifle for some time, run a patch with oil through the barrel; then when you shoot again, run a clean patch through before firing the first shot,

6. Confirm that all rifle parts are adjusted properly (same for each shooting bout)

- bedding screws attaching barrel to the stock are tight,

- screws securing sights tight; knob for securing aperture in front sight snug (aperture sitting flat in the notches where it is seated in the front sight); peep disc on rear sight screwed on snugly,

- screw securing the carrying harness attachment block in the slot on the stock is tight; harness bungee cord knots secure,

- screw securing the sling attachment block in the slot on the stock is tight,

- cheekpiece and butthook secured; barrel weights secured if present,

C. Standing Position

1. With only two contact points on the ground the position is less stable, but the same six fundamental steps in the shooting sequence apply,

2. Start with a solid platform, oriented 90° to the target, feet approximately hip width apart, even weight on each foot, not leaning backward to compensate for rifle weight or to get it over the legs,

- position should be relatively relaxed, that is “slump” into position allowing the abdomen to stick out slightly (puts a slight arch in the back),

- build the position so you use minimal muscular effort; support is mainly with bones,

- left upper arm (RH shooter) should be held against the rib cage with the left elbow supported on the hip bone, if possible to accomplish without having to force the rifle up onto the target using muscular effort or unstable left hand support position,

- whether supporting the rifle forestock between the first two fingers with the thumb under the trigger guard, or otherwise, the left hand position should be comfortable (at least after you get used to it), stable, and positioned the same each time,

- guide the butt of the rifle into the notch formed by the top of the upper arm bone and collar bone,

- with your head held straight, bring the rifle to your face (not tilting the face over to the rifle) so your cheekbone rests on the rifle cheekpiece at the same point each time,

- the butt hook should be positioned sufficiently low on the buttplate to allow the rifle butt to be positioned high enough on your shoulder so you can look out the center of your eye (area of clearest vision) directly through the sights comfortably at the target without leaning the head over at an angle (i.e., if you lean over to see through the sight, you will be looking out of the eye off center which is less clear),

- the right hand (RH shooter) does not support the rifle (when you are in shooting position, it can be removed from rifle with no noticeable effect on rifle stability); place it on the stock so the trigger finger rests on the trigger halfway between the tip of the finger and the first joint so it will move straight to the rear when the trigger squeeze (no “snap shots”) is accomplished; position of the hand on the stock and where the finger contacts the trigger should be the same each time,

3. If you can't see the target through the sight, lean away from the target, slightly(!) to elevate the muzzle (also, to effectively raise the front of the rifle, try attaching a block - about the thickness of a box of bullets - with tape or screws to the bottom of the forestock or trigger guard where your fingers will support the rifle; the size of block is limited by an IBU rule that says the distance from the centerline of the barrel to the bottom of the stock, including any block, cannot exceed 120mm),

4. Practice holding exercises (up to several minutes) and try changing various aspects of your position to see if that makes it more stable or less; incorporate those modifications that do; it's ideal to do this in front of a full-length mirror,

5. Initially not so concerned with where the rifle points as with settling into a stable position and natural point of aim; then if not aiming where you want to, adjust the position so you are,

- try adjusting your position so your natural point of aim is slightly right or left of the target (experiment to determine which is most effective); then twist slightly to move your natural point of aim so it is approximately centered on the target – this produces some tension in muscles which can make the position steadier than in a neutral position (don't hold this position for more than 6 or 7 seconds or the tensed muscles will transmit vibrations to the rifle and lactate will build up),

- remember to move your position and natural point of aim slightly for each succeeding target,

6. Zero note: zero your rifle under approximately neutral light and wind conditions; with nail polish etc. mark on the body of the sight near each adjusting knob the position of 0 on the knob under these conditions; this gives you a starting point for zeroing each time to which you can

apply adjustments (e.g., if there is a breeze from the west on our range, you could try 2 clicks left from the 0 point),

D. Shooting With a Heartbeat (prone)

1. Probably can't eliminate all of the bounce that you see in the sight picture resulting from heartbeat,

2. Try flexing the right knee (RH shooters) some to lift the chest farther off the mat so the heartbeat isn't reflected as strongly through the body to the rifle,

3. Usually the heartbeat isn't strong enough to move the shot out of the prone ring if other aspects of your shooting sequence (position, natural point of aim, breathing, trigger control) are solid – so take the shot when it looks good,

E. Exercise (prone)

- try closing your eyes as you do your slight position shift from one target to the next, and then opening to see if your natural point of aim is correct for the new target; don't worry about speed at this point.