

## **Physical – Technical – Mental – Emotional – Part 2**

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**“Correct technology and technique are critical to success;  
Clearly necessary, but not sufficient by themselves.”**

Champion athletes bring together an effective blend of physical, technical, mental, and emotional aspects of performance in order to thrive and excel under pressure. In the previous article, we touched briefly on many of the physical aspects of the sport. Now we turn our attention to the next important major area, some of the technical parts of the sport.

### **Technical**

Each of the three Olympic shooting disciplines have demanding requirements around technology, positions, and technique.

A quick glance at a target rifle makes it obvious that there are numerous adjustments, each of which must be optimized for the athlete. There are many different styles of rifle, stock, butt plate, sights, and numerous accessories. Pistols have far fewer adjustments, though there are still adjustments to sight radius, sight widths, and any number of variations in grip design, setup, and customization. Shotgun may appear to the uninitiated to be rather “simplistic” in comparison, until one learns about all the factors involved in fitting the shotgun to the athlete.

All three disciplines have varying adjustments for trigger placement and trigger setup. Many athletes get caught in the trap of eternally adjusting and changing their firearm in search of those next few points. True, the firearm must be properly adjusted and fitted in order to excel. Once a solid baseline is established, the athlete must then leave well enough alone, train and compete, and then make adjustments only when there is a clear reason to make a specific change.

Proper positions, initially covered in the previous article, excellent balance, and proper natural point of aim are also critical to success. First, the technical aspects of positions are explored.

Rifle tends to have very detailed, technical positions due to the nature of the positions and the rifle. Athletes who have a standing position with lots of “banana back” where the hips are well out over the toes and the shoulders are back over the heels are going to have significant back problems in the future as well as have to constantly fight a very “springy” position. Even if the position is mostly upright, twisting the hips around toward the target, even a small amount, also results in a “springy” position. The most important fundamental of any position is the use of bone and ligament instead of muscle and tendon in building the position.

Pistol positions appear simple at first. Though much more Spartan than rifle, pistol positions also require proper use of the physiology. The support arm must use muscle in a way that minimizes fatigue and maximizes stability. The majority of pistol shooters use a position where the heels are directly in line toward the target. Others find that a roughly 20 to 30 degree

turn toward the target is best for them. Ideally, heels, hips, and shoulders are all on the same plain. Work with your coach, experiment, and trust your instincts.

Shotgun also appears to be quite simple, though one cannot just randomly walk up and shoot well! Indeed, it should be very simple and natural, yet the proper setup is required to allow smooth movements. The position and orientation of the feet, details of the stance, weight distribution, and of the overall position, set the stage for a successful, flowing, and confident shot.

Balance is known to be very important, yet the techniques of understanding and properly affecting balance not always understood. When standing naturally, most people have their feet pointed a bit toward either side. Thus, the feet are not parallel and the toes are farther apart than the heels. This results in a stance that is dynamic and has the balance point roughly between the heels and the balls of the feet. In this stance, there is some natural body sway. By maintaining the balance roughly in the middle of the foot there is no danger of falling over, yet there can be significant sway. For rifle and pistol shooting, with their upright and static standing positions, putting most of the weight on the heels and having the balance point just at the front of the shins, produces a stance that is very, very steady, especially for athletes who have or develop good balance sense.

Going ice skating for 2 hours each week for 8 months will result in an incredibly steady stance, partly due to the balance training demands of skating and partly due to the excellent muscle tone and endurance in the leg muscles. With calmer, stronger, more enduring muscles combined with trained balance sensing, corrections are much more subtle and the stance is unbelievably steady. This is but one example of ways to train the balance.

Natural point of aim (NPA) is also a critical foundation for rifle and pistol. Shotgun also has an analogous concept, though it takes a somewhat different form. Many people describe NPA as "...getting the rifle/pistol to point at the target." While not incorrect, it misses the essence of NPA. In reality, NPA is all about the athlete discovering where the rifle/pistol wants to point when we are relaxed into position. We must not impose our will! Once we discover where the rifle/pistol wants to point, we then make adjustments, check again, and repeat until we have aligned where the rifle or pistol wants to point with the center of the target. Again, we must not impose our will.

We must also not use our eyes to point at the target and call it good. Our checks must include the eyes being closed long enough to allow the visually induced muscle tensions to dissipate, and even then, we must wait until we are balanced before opening our eyes, else the check will be false. A detailed NPA routine has been developed which is rigorous, takes into account the "will" and visual factors, and works extremely well. A write up is scheduled to be online by the time this article is in print.

Shotgun has a different dynamic. The athlete plans where they want to break the target and adjusts accordingly when setting up their stance. The goal is to facilitate a smooth, comfortable movement of the shotgun to the target and break point. Details are left to the shotgun coaches to explain for us.

Another important technical aspect is vision. All shooting athletes should get their eyes checked each year. Even a slight change in prescription has a profound effect on one's ability to see clearly when aiming. Many pistol shooters discover that having the eye doctor provide a

second “occupational” prescription that is +0.5 diopter different from the athlete’s normal prescription and placing this lens in a shooting frame provides a sharp, clear view of the front sight with no fatigue. Vision is of critical importance for shotgun, with its rapidly moving targets.

Clearly, there are numerous additional technical aspects of target shooting that remain unmentioned in an article this short. Get something that works, use it, learn it, and then you will be able to discern what needs to be adjusted or changed. The beginner cannot buy all the gear, set it up perfectly, and never change it again. Similarly, constant changes are a sure bet to frustration.

The books by Heinz Reinkemeier are especially useful in understanding the physical and technical aspects of rifle and pistol, along with the mental and emotional aspects. See the “Resources” page of the blog for details and links. If readers will send me suggestions for truly excellent shotgun books, I will gladly post those on my blog. Of course, there are many great coaches around the country who are happy to work with you.

In the next two installments of this series, we provide a short overview the mental and emotional aspects of high performance and thriving under pressure. Finally, we will bring all of these aspects together as we look at the actual delivery of a shot.

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The “On The Firing Line” series is published by the national governing bodies for Olympic shooting in Japan and the USA, and has been adapted for archery as “On the Shooting Line” published by USA Archery. Olympic Coach Magazine, the National Association of Soccer Coaches, and others have referenced selected articles. The entire series is available online at [www.pilkguns.com](http://www.pilkguns.com).

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## **Links:**

High Performance Olympic Target Shooting blog, books, and additional resources  
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On The Firing Line article series and additional resources  
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