

TRAINING – Part I

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The Way to Success in Shooting

By Gary Anderson, DCM Emeritus



Eight of the best junior women rifle shooters in the world are shown in this photo of the start of 50m 3x40 Rifle Women Junior final in the 2018 World Championship. These women are all products of elite junior training programs in their nations of China, France, Russia, USA, Iran, Italy and Switzerland. USA athlete Morgan Phillips (4th from right) qualified 1st and finished 4th after the final (1171/434.3)

Virtually everyone who knows anything about the sport of Shooting agrees that Shooting is a sport where ultimate success is determined by training. The questions coaches, junior athletes and parents ask are not about whether training or practice is important, but about how to train. They want to know what the objectives of training are, what types of training should be done, what training strategies to use and how to plan effective training programs. This **On the Mark** article seeks to provide answers to those questions.

Training is such a decisive factor in determining success in the sport of Shooting because it is a sport where precise motor skills must be developed through thousands of correct repetitions. Shooting training is concerned with how to do those correct repetitions. Training for Shooting

athletes thus begins by recognizing that in precision skill sports, and especially in Shooting, champions are determined by how much and how well they train and not by any measure of natural ability or physical talent that they bring to the sport.

What is Training?

Training in Shooting is not simply trying to shoot higher scores by doing more shooting. Doing more shooting will improve shooting scores but it is not the most effective way to train. This is especially true for young athletes in schools or colleges who must balance sports training with the demands of family life, schoolwork and other activities. Moreover, in the world of elite shooter performances at Olympic and World Championship levels, it is no longer

possible to win by simply working harder than everyone else. Today, winning in international championships can only be achieved by combining an incredible amount of hard work with the most advanced, effective training methods.

Sports training is the **systematic repetition of sports skills with the objective of learning and perfecting those skills so they may be performed in sports competitions**. "Systematic" addresses how the variables in this equation are managed. Shooting training variables include 1) the athlete's level of development (beginner, intermediate, advanced, elite), 2) the athlete's dreams, goals and commitment, 3) the training environment (training time, equipment, range facilities, family support, the group environment) and 4) the technical expertise (knowledge and coaching) available to the athlete. Training that produces optimum results is training that takes each of these variables into account and manages them to the athlete's advantage.

Athlete's Level of Development. How an athlete trains must first be determined by their level of development. Training methods and practice volumes that are appropriate for each athlete evolve through four fairly distinct phases of development: 1) **learning** shooting skills, 2) **mastering** shooting skills, 3) **improving** advanced shooting skills and 4) applying **high performance** demands.

• **Beginner – Learning Shooting Skills.** In the learning phase, the emphasis is on instruction and doing practical exercises that apply this instruction. Beginner instruction is given in progressive steps: 1) gun safety and range procedures, 2) shot technique and supported position firing, 3) learning the standing-prone-kneeling positions and 4) shooting full courses of fire. Training volume is generally light in this phase. A typical training session includes 15-20 minutes of instruction and 30 to 60 minutes of dry fire and live fire repetitions to practice what was taught.

Successful training programs for Shooting manage the variables impacting each athlete:

- **Level of Development**
- **Goals and Motivation**
- **Training Environment with the objective of maximizing the athlete's competition results.**

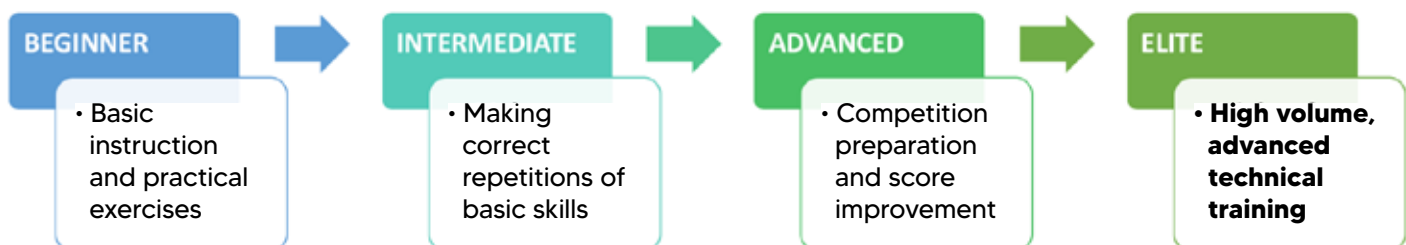
• **Intermediate – Mastering Skills Phase.** In this phase, athletes focus on making correct repetitions of the skills they learned as beginners. Here the coach's role shifts from giving instruction to observing, answering questions and making necessary corrections. As shooters become comfortable with their firing positions and shot technique performances, training volume should increase. An athlete in this phase can handle one to two hours of shooting a day, three to five days a week. Coaches and athletes can evaluate their training loads by determining whether they are putting full concentration and effort into performing each shot correctly.



Training requirements for beginning and intermediate athletes are very different from the training requirements for advanced and elite athletes.

ATHLETE DEVELOPMENT LEVELS

Training demands, technical content, training methods, training volume and coaches' roles change as athletes advance from one level to the next.



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The world's most successful rifle shooter in recent decades, Nicco Campriani of Italy (center), credits part of his development to training and coaching he received while he competed as a member of the University of West Virginia Rifle Team. Campriani (center) is shown here after receiving his third Olympic gold medal in the 2016 Games (50m 3x40 rifle). The silver medalist was Sergey Kamenskiy, RUS (left). The bronze medalist was Alexis Raynaud, FRA (right).

• **Advanced – Competition Participation and Improvement.** Athletes in this phase have perfected their skills and are regular participants in individual and team competitions. Their training has two objectives, 1) to prepare for upcoming competitions and 2) to continually seek ways to improve their scores. The coach's role in this phase is to assist in planning preparations for competitions and to serve as a technical resource to help the athlete find ways to improve. Training volume in this phase depends upon athlete and team goals. An athlete who is focused on enjoying a positive sports competition experience may find that two or three one to two-hour practice sessions a week are sufficient. Conversely, an athlete or team whose goals are focused on achieving major competition success will find it necessary to train five days a week for two to three hours per session.

• **Elite – High-Performance Training and Competition.** Athletes in this phase are not only focused on achieving winning performances, but on doing that at national and international levels. Training here also focuses on preparing for upcoming competitions and on continuing to improve but in much more phased and focused ways. Coaches at this level must have advanced knowledge of high-performance training program management and shooting techniques. Athletes at this level typically have life situations that afford them sufficient time and flexibility

to attend numerous competitions and train three to five hours a day, five or six days a week, 11 months out of a year.

Dreams, Goals and Commitment. One of the biggest variables in sports training is the athletes' goals and motivations. It's one thing to say, "*I want to become an Olympic gold medal winner.*" It's quite another to actually have the dedication and self-discipline to do the hard work necessary to even have a realistic possibility of becoming an Olympic gold medal winner. Most beginners start with little more than a thought that "it would be cool to learn how to shoot." However, as they learn basic skills and more about the sport and its challenges and opportunities, they will begin to dream about what they want to do in Shooting. Many youths will be satisfied to see themselves stay in shooting for a while and have fun finding out how well they can shoot.

Many will want to make their school or club competition teams. Some will dream about trying to win individual or team competitions. A few will dare to dream big dreams about going on to shoot on college teams, making a U. S. National Team or even one day standing on a victory stand at a World Championship or Olympic Games.

Athletes' dreams become goals and those goals define how athletes must train to achieve them. The athlete who just wants to learn how to shoot will find attending weekly shooting club sessions during the shooting season sufficient. The athlete who dreams of becoming a college or national team member needs to commit to doing the types and amounts of training necessary to fulfill that goal. The determining factor, in the words of Lones Wigger, an all-time great Olympic and international champion, "***is not whether you have the will to win, but whether you have the will to prepare to win.***" Dreams may inspire champions, but they don't make champions. **Only when dreams and goals become commitments to do the work and training necessary to achieve those goals do they become effective goals.** It is this commitment or will to train that determines training results.

Training Environment. The environment in which an athlete trains definitely impacts how they train and what their training outcomes will be. Training environments

do not have to be ideal in order for athletes to advance but they do have to be taken into account in designing training programs. When there are shortcomings in the training environment, athletes and coaches must find ways to compensate for those limitations.

- **Time Available for Training.** A practical matter for young athletes in the USA who have responsibilities to their families, schoolwork and friends is that the time they have available for sports training is limited. They are not like young athletes in Chinese sports schools where school hours are limited and shooting training time is greater. Young athletes here must practice time management. When they come to the range to shoot, they need to limit socializing time and spend as much time as possible actually shooting. To train two or three hours a day, they need to reduce or eliminate television or video game time while making sure they still allocate enough time to their studies and family.

- **Equipment.** Most junior shooters start with equipment provided by their club or school. Many of the rifles and shooting clothing provided by these programs have seen many years of use. This equipment likely will still work well for someone who is learning how to shoot, but advancement to the intermediate level will be slowed and advancement to the advanced level will be nearly impossible unless rifle athletes have suitable rifles and well-fitting shooting clothing and pistol athletes have good competition pistols. One key to advancement is when young athletes, with family support, are able to acquire their own target guns, clothing and equipment.

- **Range Facilities.** Today, most juniors have access to 10m air gun ranges through their clubs or schools. A much smaller percentage of juniors have access to smallbore rifle or pistol ranges. But then comes a critical question: How often are these ranges open, supervised and available? Schools and clubs that develop top level teams recognize how their ranges must be available more than one or two days a week if their athletes are going to do advanced training. Schools and clubs should take steps to keep their ranges open as many days during the week as possible. Another solution for athletes who want to train more is to obtain their own equipment so that when their ranges are not open, they can train at home, either on their own 10m ranges or by dry firing.

- **Family.** Families (and friends) play a big role in determining how much and how enthusiastically young athletes train. The ideal situation is when an athlete's family understands and supports an athlete's goals. When family members or friends tell a young athlete, who is motivated to do lots of training, that they are wasting their time, it's pretty difficult to stay motivated. Another negative situation is when parents push their children to pursue sports goals that are the parents' goals, not those of their children. Participation in higher level youth sports competition requires young athletes' families to support their attendance at practice sessions and cover equipment and travel costs. In shooting, especially rifle shooting, equipment costs can be substantial.

- **Group Environment.** One aspect of the training environment that can determine how athletes train is what might be called the group environment (*Gesellschaft* in German). Some school teams and clubs consistently produce outstanding junior shooters because their leaders expect excellence from team members and team members expect excellence from each other. A program that approaches its practices as regular sports team practices will facilitate better training. Champion Shooting athlete or marksmanship history images that are displayed at a range can inspire stronger motivations. Programs that inform their athletes about winning scores, especially at the international level, will raise their athletes' mental standards.



Having a qualified coach plays a decisive role in determining athlete training effectiveness. Here, a coach of India's National Junior Team intervenes with her athletes during a 2019 ISSF Junior World Cup Mixed Team Final.

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Access to Technical Expertise.

Junior athletes who have truly knowledgeable coaches are fortunate. Being taught correct firing positions and shot technique greatly speeds up the learning process. Junior athletes who have competent coaches need to listen and apply what their coaches teach. A big concern arises when junior athletes want to learn more or, worse yet, do not have competent coaches. There are ways to compensate for this void. **CMP Junior Rifle Camps** that take place every summer are a great way to get advanced training.

Attending **U. S. Army International Rifle Team Clinics** is an excellent learning experience. Self-study can be very beneficial. **Coaching Young Rifle Shooters** and selected other publications* can be sources of a treasure trove of technical knowledge. Athletes who want to move up to advanced and elite levels will be wise to accumulate a library of training resources that they study on a regular basis.

What are Training Objectives?

The objective of Shooting training, overly simplified, is to improve one's scores. That, however, is not an especially useful understanding of what Shooting training must accomplish. Coaches and athletes need to know what specific aspects of performance must be developed and improved through training. Training objectives in Shooting are to improve:

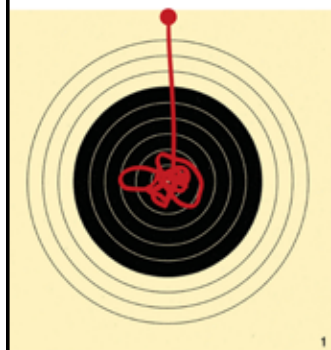
- **Hold Stability.** In both rifle and pistol shooting, scores are directly related to how stable an athlete's hold is. Training must develop stable firing positions that along with shot preparation and position alignment techniques produce the steadiest possible holds. This can be done by making live fire repetitions, but often the most effective training methods for developing hold stability are aiming exercises, holding drills, inner position evaluations and dry

* **Coaching Young Rifle Shooters** by Gary Anderson focuses on the technical training of beginning and intermediate rifle juniors. It can be purchased from the CMP E-Store. English translations of German texts by Heinz Reinkemeier and Gaby Buhlmann titled **Ways of the Rifle, Air Rifle Training and Competition** and **Sport Psychology and Competition** are excellent advanced technical resources. Coaches and athletes may also download copies of selected **On the Mark** technical articles by Gary Anderson (https://thecmp.org/news-media/gary_otm/) to use them as resources.

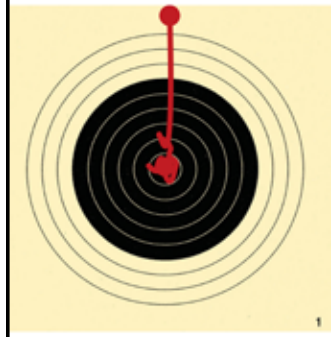
A RIFLE ATHLETE'S "HOLD"



A new athlete's standing position hold on the BMC target will have a large arc of movement.



After one or two years of training an intermediate athlete will have a standing hold like this on the competition target.



After more intense training an elite athlete will have a standing hold like this. Training is what makes the difference.

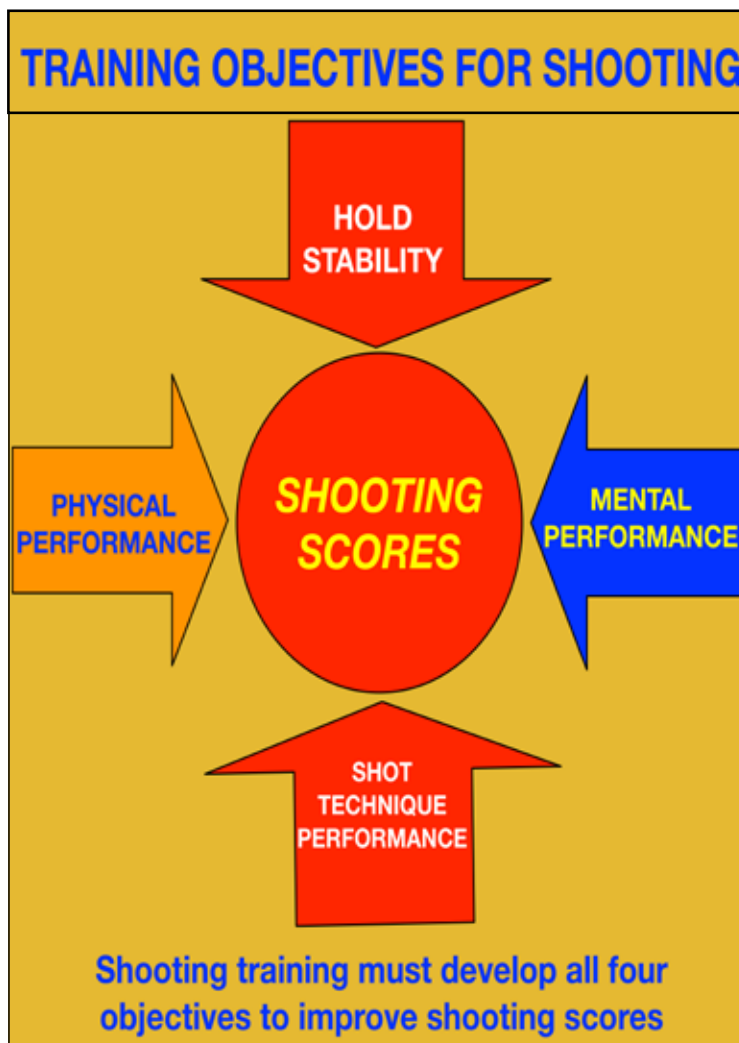
firing.

- **Shot Technique Performance.** Shot technique for beginners is quite simple: Align the sights on the target, stop breathing and smoothly press the trigger. As an athlete advances, shot technique becomes more and more complex; athlete training must support that advancement. Shot technique is developed through shot repetitions. It is improved by establishing a shot plan and perfecting the execution of that plan through dry and live fire training.

- **Mental Performance.** Mental performance impacts shooting results by determining how well an athlete concentrates, how disciplined athletes are in following their shot plans and whether they remain positive and in-control before, during and after each shot.

Even beginners need concentration and self-control/emotional control skills. Advanced athletes must become very skilled at focusing attention (concentration) on selected aspects of performance and on disciplining themselves to consistently follow their shot plans. Mental performance is best trained during dry and live fire repetitions of complete shots when combined with honest evaluations of these aspects of mental performance.

- **Physical Performance.** An athlete's physical performance manifests itself in several different ways. Achieving pistol or rifle stability requires precise neural-muscular coordination. A pistol athlete requires considerable arm and shoulder strength to lift and hold the pistol with maximum stability during multiple repetitions. A rifle athlete requires selective muscle relaxation and tension to maintain stable firing positions and execute shot technique. An athlete's general physical condition impacts their ability to carry out a heavy training load as well as their ability to function well under the mental and physical stress of competitions.



Different specialized training methods help athletes analyze and perfect how their bodies perform while trying to improve hold stability. Here, Olympic gold medalist Ginny Thrasher, USA, warms up before 50m range training by doing holding drills without her shooting jacket.

Training Methods

Training methods are the specific exercises or activities athletes perform during their training. Simply going to the range and shooting an established course of fire day after day is a method of training, but it is not a particularly effective way to train. There are different training methods because different training drills offer different training benefits. An effective training program for any athlete considers the athlete's level of development, goals, and training environment to plan which training methods to use and how much of each training method to use. Training methods used in shooting are:

- **Range Training.** Range training is the firing of live fire shots on an actual 50m, 50 ft. or 10m range. It is also possible to do 50m training on reduced targets at 50 ft. or to do 10m training where shooting is normally done on single bull targets by shooting at 10-bull targets.

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Range training is easier to evaluate because scores are produced, and scores are usually the best indicator of performance. Athletes should record all scores fired and use them to chart progress and improvement. When sufficient range time is available, live fire range training must be the major component of an athlete's training.

- **Dry Fire Training.** Dry firing is performing all phases of firing a shot without loading the rifle or pistol. When done correctly, dry firing simulates the firing of shots and is a very effective training method. Dry firing has the advantage of costing nothing and it can be done on or off the range. Many junior shooters use dry firing to train at home when team or club ranges are not available. Beginners use dry firing to learn basic shot technique and increase the number of repetitions they get in short training sessions. Dry firing often precedes live firing as a way to warm-up and prepare for firing. Advanced athletes use dry firing to perfect shot technique because it increases the number of

possible repetitions. The key to productive dry firing is for the athlete to be absolutely disciplined in performing dry fire shots correctly and honest in calling dry fire shots. Wishful thinking does not suffice. If shots don't really look like tens they shouldn't be called "maybe tens." Being conservative in dry fire shot calling is also a way to increase athletes' mental performance demands.

- **Aiming Exercises** (holding drills). Aiming exercises are done by aiming at blank targets or a blank wall. Athletes use aiming exercises and holding drills to improve control of their body and reduce sight picture (hold) movements. Many pistol athletes use aiming exercises to enhance sight alignment stability. Rifle athletes may do aiming exercises as a way to enhance their inner position performances. They do this by focusing attention on how the muscles and balancing mechanisms feel while they strive to stabilize their bodies.



Aiming exercises on blank walls like these two pistol athletes are doing is becoming a favored way for pistol and some rifle athletes to develop improved hold stability. Aiming exercises are also used to warm up before training or competitions.



A SCATT training system display for one shot. The color changes show hold movements before (green), just before (yellow) and after (red) the shot.

• **Electronic Training Systems.** The shooting equipment market now offers several different electronic or laser-based training systems. There are probably only two commercial systems that are useful for training advanced and elite marksmen, the SCATT (<https://scattusa.com/>) and Noptel (in USA, <http://www.brenzovich.com/>) systems. Both use electronic sensors that trace rifle or pistol hold movements on the target and display hold trace lines on computer screens so the athlete and coach can analyze performances.

This article will conclude in the next **OTM** issue with “*TRAINING, Part II – The Way to Success in Shooting.*” That article will discuss training principles, training strategies and training plans.

See past articles from Gary Anderson on the CMP website:

https://thecmp.org/news-media/gary_otm/

• **Mental Training.** Mental training is usually done in parallel with other methods of training. For example, an athlete who is doing dry fire training may also consider how well they follow their shot plans or concentration sequence during each shot. Mental training is directly linked to Shooting Logbook record keeping where these considerations are evaluated after each shooting session.

• **Physical Training.** Physical training is usually done separate from shooting training. For beginning athletes, physical training is usually nothing more than encouraging them to practice active sports. For advanced and elite athletes, time should be dedicated each day to doing physical training. Stretching exercises are important to warm-up before training and competition. Physical training for shooters should emphasize exercises and sports that build cardio-vascular endurance, flexibility, coordination and strength endurance. Except for pistol athlete requirements for arm and shoulder strength, exercises or sports that emphasize strength should be avoided. Running, swimming, biking and cross-country skiing are all excellent sports for shooters. Workouts using gym equipment are useful if the emphasis is kept on lighter resistances and higher repetitions.

About the Author

Gary Anderson, Director of Civilian Marksmanship Emeritus, retired as the full-time CMP Director at the end of 2009. He continues to work with the CMP as the senior marksmanship instructor. During his remarkable career, he won two Olympic gold medals, seven World Championships and 16 National Championships. He served as a Vice President of the International Shooting Sports Federation (ISSF) from 1990 through 2018. He is a former Nebraska State Senator and Past President of USA Shooting. He served as a Technical Delegate for Shooting during the 2012 and 2016 Olympic Games as well as for the 2014 and 2018 World Shooting Championships.

In 2012, the International Olympic Committee awarded Gary Anderson with the Olympic Order, its highest honor “for outstanding services to the Olympic Movement.”

In 2014, the CMP expanded its world-class air gun center at Camp Perry and renamed the facility the Gary Anderson CMP Competition Center, in honor of Anderson's contributions to the organization and the marksmanship community.

