



TRANSLATING THE FUNCTIONAL MOVEMENTS OF THE MILITARY INTO SPECIFIC CrossFit TRAINING

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CrossFit is a branded physical training program that is "extensive, general, and comprehensive", including a series of exercises and workouts with increasing intensity, which can be an effective form of exercise for military personnel seeking a various training routine. Based on the biomechanics of the human body translated into functional movements and exercises, which allow the daily tasks to be performed efficiently, constantly varied and performed at a high intensity, CrossFit can also have positive mental and emotional effects, raising the level of certainty of the military in relation to their own abilities, capabilities and judgments. CrossFit means a lot more than just pulling the strings in the gym, it's a great way to get in shape, gain muscle mass or lose weight, and live a healthy lifestyle. The CrossFit community is well known for its close relationships with its members, for promoting patriotism, and for supporting the local community and military veterans, working hard in a variety of ways to uphold these values.

Keywords: CrossFit; physical training; training; military physical education; functional movements; fitness.

Since the founding of the military, physical training has played an important role in preparing the military for battle. However, throughout history, the methods and means used in physical training at the level of military subunits have changed and evolved so that they are prepared for the rigors of modern ground combat. Since the beginning of this millennium, the realities of modern combat have challenged many military leaders, specialists in the field of military physical education, who are part of NATO organizations, to rethink physical training and its relationship with combat training. This thinking has led to a revival of functional fitness programs and their implementation by some NATO armies (Canada, USA, etc.). These have shifted from traditional military physical training, which focuses on endurance training with long-distance running, to functional physical training, which focuses on combat training.

Although different from these programs, the development of the CrossFit physical training program in some countries whose NATO armies took place coincided with the transition of some armies to functional physical training, and today many members of the military use it regularly (in their free time) CrossFit program.

CrossFit is both a high-intensity form of training, which includes basic physical exercises for

the development of motor skills (especially strength and endurance), and a competitive sport. Created in 1995 by an American fitness trainer, Greg Glassman, with the stated goal of developing a general fitness and being a means of social inclusion, this type of fitness could best prepare the military for situations in which any unforeseen event involving a physical stress would occur (including the unknown and the unknowable).

In 1995, Greg Glassman opened the first CrossFit affiliated gym in Santa Cruz, California, USA, and in 2001 he presented his fitness program on the Internet¹ and began publishing a monthly journal and holding seminars at a local gym. Since then, CrossFit has grown steadily, now reaching over 15,000 affiliates worldwide. The founder attributed this increase to his fitness program, on the one hand to the launch of his website and, on the other hand, to the onset of the military conflicts in Iraq and Afghanistan. From his perspective, it was at this point that people began to take physical training much more seriously². In addition to its functional military applications, many attribute the popularity of the CrossFit program to its simplicity and variety. Soldiers who are on a mission abroad and are in an austere area have found that the CrossFit program, because it is not based on a lot of equipment or long-distance running and can be performed almost anywhere.

The particular feature of CrossFit is not the specialization of the military in a certain field; instead, hand-to-hand combat with or without

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portable weapons, military pentathlon, sports games, etc., are activities that force the military physical education specialist to deepen some restricted aspects of the field and to create in the military certain characteristic features. The CrossFit method is unique because it focuses on maximizing the effects of the nervous system (in interaction with the endocrine system) on the body, on the development of strength, on Cross-training (a training method that combines elements of strength, cardio-respiratory fitness and body weight exercises), on a constant and functional exercise training and on the development of successful diet strategies.

The concept of CrossFit training

CrossFit is a lifestyle characterized by simple and effective exercise and a healthy diet. "Nutrition can be considered both a positive factor, which can stimulate or increase military performance, and a negative one, which affects the efficiency of military actions. The quality of the food, its availability, as well as the rational planning of the military feeding can contribute to the fulfillment of the objectives of the missions"³. CrossFit can be used to achieve any goal, from improving health or losing weight to achieving greater physical performance. The program works for everyone, both beginners and those who have been training for years.

The training concepts of Cross Fit's fitness are based on three standards that are used to determine the level of physical fitness of the military. The first standard refers to the ten general physical abilities and basic motor qualities, such as: strength, speed, cardio-respiratory endurance, mobility, suppleness, strength, coordination, agility, balance and accuracy. According to this standard, it is determined how prepared a military man is, depending on how competent he is in these ten skills. The second standard promotes the idea that the level of physical training is given by the achievement of good performance in a wide range of physical tasks. CrossFit refers to this standard as an "extraction urn". If someone put in a ballot box all the physical tasks that can be imagined, would mix them, and then randomly remove a load from the ballot box, I would measure the level of physical training of a soldier, depending on his ability to perform constantly any of the tasks removed from the ballot box. The third standard is

the ability of the military body to perform well on the three metabolic pathways that provide energy for all human activities (catabolic, anabolic and amphibole). According to the latter standard, a military man is just as prepared as these metabolic pathways have the ability to synthesize molecules with the use of energy or to break down complex molecules by releasing energy in the process⁴.

In order to achieve the general objectives of CrossFit, during specific military training they are determined to perform constantly functional, varied and high-intensity movements. In general, these movements fall into one of three categories (or modalities): gymnastics, dumbbells (an Olympic sport in which weights are lifted, from the ground to the top of the head) and metabolic conditioning ("cardio"). Metabolic conditioning refers to those dosages of training in which exercise periods alternate with rest periods to provoke a certain response from the body. The body has several different methods of obtaining energy, and this expected response is usually to maximize the efficiency of a particular energy system⁵.

In a specific CrossFit workout, a general warm-up is performed first (preparing the body for effort), then a skill or motor quality is developed, and at the end, the "workout of the day" (WOD) is performed⁶. The composition of the WOD varies from day to day, and usually includes a mixture of functional exercises, performed with a high level of intensity over a period of 5 to 20 minutes. CrossFit workouts can be modified to help each soldier achieve their goals and can be tailored to any age group or level of fitness. The key to this training method is the idea that CrossFit is the "sport of fitness", trying to capitalize on the competition, the pleasure of doing sports and the feeling of friendship with the comrades with whom the military shares this experience, by scoring, timing training and defining performance rules and standards.

Another key element of CrossFit training is the spirit of sport and competition. In this sense, most CrossFit gyms use some strategic actions, such as: displaying tables with performance statistics and posting winners on social networks, used rather as motivational factors to increase productivity and satisfaction, than as a reward system. So, if competition motivates you to get better, and the spirit of winning and the desire to win pushes you to push your limits physically, then CrossFit can



prove to be a great way to lead you so as to get fast results.

As with all high-intensity workouts, CrossFit also involves the risk of injury. A study found that about 20% of those who performed specific CrossFit training suffered various sports injuries, mostly fairly mild acute injuries (however, a fairly high percentage for recreational activity)⁷. The factors that led to these injuries were mainly an incorrect exercise technique and a wrong dosage of effort.

When it comes to avoiding trauma, the right form of execution is essential. The most important things to look for in order not to miss the execution technique are: rounding of the lumbar spine (it produces a huge load on the muscles and ligaments in the lumbar area, which are not designed to support it) and an increased translation of the knees forward during exercises, such as kneeling or straightening. As you squat, if your knees move forward over your toes, then the load on your knees becomes huge, and your joint often cannot cope. Most often, both injuries occur due to the fact that the lack of mobility and stability of the hips or ankles is compensated.

All CrossFit exercises are great when they are dosed and performed correctly. Here is a problem with inexperienced coaches who increase the volume and intensity of effort too quickly and cause the military to complete all repetitions of an exercise, even if they have a state of general fatigue (a temporary state of decreased functional potential of the body).

When you first enter a CrossFit workout gym, you may hear some specific words / phrases or see certain acronyms written on a board, the meaning of which should be known before you get engaged in such a program. Here are some of the most common⁸:

- WOD = *Workout of the Day*;
- EMOM = *Every Minute on the Minute*.

The challenge is to complete a certain number of repetitions of an exercise in less than a minute. The time remaining after the end of the repetitions and up to 60 seconds is considered to be a break, being intended for the recovery of the body. This is an effective training style, as it requires a lot of effort to achieve a longer recovery time, allowing the military to become creative in training, and thus making it more difficult increasing their level of physical training;

- AMRAP = *As Many Rounds / Reps as Possible*. It consists of going through as many series / repetitions of a certain training sequence or circuit in a certain period of time;

- "Box" = A word that defines a CrossFit fitness room equipped with the bare essentials (materials, equipment, facilities) to perform all WODs;

- "Ladder" = in steps. Word that defines the execution of an exercise in series, in which the number of repetitions increases by one unit each time is performed a new series (continuous increase method);

- "Zone Diet" = the diet that CrossFit promotes, which is based on the basic components of the daily diet, a combination of macronutrients (carbohydrates, fats and proteins). "To reduce excess body fat, the combination of diet and exercise has proven to be the most effective method"⁹;

- PR = *Personal Record*. This refers to the time when the best personal performance, recorded for a certain physical exercise is exceeded (for example: performing a certain number of squats in one minute);

- "Hero WOD" = the name of some training given after the names of some heroes / veterans (mostly military) who sacrificed their lives for their country.

Even if the military is not ready to start a classic CrossFit training or the unit does not have a sufficient material base in this regard, there are various elements of CrossFit that can be incorporated into their own training programs. One of these elements is *functional movements*. These are the movements you make in your daily life without realizing it. When performing a basic movement in a workout (such as squatting or lifting a heavy object off the ground), the muscles will be able to move in the same way as when you have to do the same movement in everyday life, thus reducing the risk of injury. Other elements that can be borrowed from the structure of CrossFit workouts are the "EMOM" method (described above) or the "Race against the clock" method. The latter consists of performing as many repetitions of one exercise (or more) over a given period of time¹⁰.

CrossFit in its relationship with the army

Similar to the principles of training in combat disciplines or the instruction to shoot with the equipment provided, the movements performed in



CrossFit training are safe and effective only when performed correctly. This means that the military must first form the skills needed to perform the movements correctly and consistently, and then add intensity when performing those movements (performed with greater or faster weight). Moreover, establishing an effective training plan is as important as achieving effective results. Therefore, it is essential that sports instructors be properly trained in order to establish an effective training program and to develop a correct movement mechanics in the military.

The implementation of a functional fitness program (the basis of CrossFit training) in operational units should be done in three stages, as follows¹¹:

- the training of training instructors, who in time will practice and improve their technical training, and the acquisition of the necessary equipment. The selected instructors should be leaders in the units, respected by the other military, and it is not necessary for them to have previous experience in conducting functional physical training programs as long as they are physically fit;

- building credibility by conducting scientific research involving the military within a subunit, in order to highlight the effectiveness of the program. During this time, unit commanders will observe, evaluate, and become accustomed to the idea of functional physical training;

- complete implementation throughout the unit.

Given the common body of sports science that has incorporated both military physical education from the army and the CrossFit community, there are some aspects of the CrossFit methodology that the military could adopt to modify, refine, or correct assessment tests of military personnel and, more importantly, to contribute to a long-awaited review of the concept of military training.

The challenge of assessing the level of physical training of military personnel (abbreviated: TEN.PF.PM) in the Romanian Army is to find a way to persuade the military not to train (sometimes exaggeratedly) only for the specific movements required by the test. Physical training sessions usually consist of performing only the exercises (push-ups, sit-ups and endurance running) that will be assessed during the test. Being one of the shortcomings of the current TEN.PF.PM, the army has to approach new and varied training strategies

to prevent the military from doing the same motor actions, identical to the set of movements or actions produced by the body within TEN.PF.PM.

CrossFit contains numerous verification tests that assess all forms of manifestation of basic motor skills, as well as the degree of mastery of many motor skills. CrossFit is based on a constantly changing training strategy, with an emphasis on providing an effective stimulus for each set of exercises and the possibility of recovery after training, which results in significant increases in fitness. Daily workouts are almost always different, but they include the basic movements and key components of the physical training needed to develop all the basic motor skills. Simply put, improving performance in every move does not just mean doing that move over and over again. The increase of sports performance, which is obtained in the three tests within TEN.PF.PM, involves the improvement of all body systems that are involved in performing those physical activities.

The second aspect concerns centralized programming. In the army, specialists in the field prepare specialized documents for planning and conducting military physical education sessions. They are based on documents developed by the central structure of this field within the Ministry of National Defence (the concept of physical education in the army, military physical education regulations, sports calendar, etc.), as well as their education, training and personal experience. In a brigade, the physical training of the military in each subordinate unit can vary greatly depending on the guidance of the unit's specialist.

Instead, CrossFit involves centralized programming. In most affiliated gyms, each work group over the course of a day will perform exactly the same training program (including warm-up and return-to-body sequences). This daily program is usually designed by an experienced coach who has the highest level of skills and knowledge (CrossFit certificate – level 4), based on key programming methods built around general physical training. There are also numerous websites and blogs through which CrossFit affiliates can conduct daily, weekly, and monthly training programs¹².

In the army, when all the soldiers in a unit would do the same type of training, this would reduce the obligations of those who lead the military physical education activity and allow them to focus more on



conducting a series of exercises. Also, by doing the same standardized training, at the end of the program, all soldiers will achieve the goals set regardless of their level of physical training. Achieving optimal performance and improving the workplace is the key to reaching this point, but training itself can also help keep all military personnel focused on the same desired stimulus. Probably, not every unit has an experienced specialist (teacher, instructor, coach, etc.) who will effectively lead all military physical education activities, so centralized programming should be an important component in building a strong sports culture and consistent throughout the army.

The third aspect that could be adopted by CrossFit is the preparation of daily training programs structured on levels, depending on the performance achieved, which also have a competitive character. In most CrossFit gyms there is a large board on which a single workout is written (the one that will be done by all groups on that day), along with which will be displayed a ranking of the performance obtained by all those who have training has already taken place that day.

Intensity is the key to improving performance, and varying the intensity of effort is the key to better fitness. On some days the body's demand is high, while on others it is moderate or low, but when you compete against your teammates or to establish a high performance (personal or in the group), you will be more motivated than usually, which will increase the duration and intensity of the effort in training, producing better performance and an increase in resistance to physical exertion.

Competition is a vital component of success in military training. In a CrossFit gym, you compete against the clock, against your own previous performance, against the results written on the board, and against your teammates. Incorporating these aspects into military physical education through the organization and intentional management of serious competition can greatly increase individual and team physical performance. In this sense, the placement of a blackboard in a subunit and the conduct of daily competitions (individual and team), will allow the military, by making physical efforts, to demonstrate their qualities of being remarkable or extremely good.

In relation to the performance obtained, a simple rule must always be followed, according to

which the military constantly needs a judge who is impartial and who motivates them to follow the results achieved. TEN.PF.PM is administered only once every six months, which, in order to improve performance, it is an activity (in which competition intervenes or may interfere) that is very rare. Therefore, the integration of regular sports competitions in the military training program, to be run between the two annual TEN.PF.PM, will lead to an improvement in their level of physical training.

One last aspect noticed at CrossFit is its center of gravity, namely the body of trained and certified instructors who lead the activity. Having an experienced coach and a low ratio of instructor to number of participants is ideal in any physical education activity. A small number of participants will allow teachers to have easier-to-manage tasks and more time to work with them individually, involving them more in various physical activities, which may not be feasible in a larger group. It takes time to develop the skills to lead a group effectively.

From a logistical point of view, specialists in the field should be able to train everyone effectively and safely. They must explain the technique of performing the movements, offer each individual an option adapted to his level of physical training and impose those methods, so that there is no risk of unnecessary injuries. This can be done effectively with a larger group of participants, but to do this, you need an experienced coach who has the right knowledge and communication skills. In this regard, CrossFit is based on a multi-skill training and certification program for instructors.

In addition to officers licensed in military physical education, the military also relies on sub-unit sports instructors who have varying levels of experience in the field to conduct physical training activities. The Army organizes annually, through the *Center for the Training of Military Personnel in Physical Education and Sports in the Army (CPCMDEFSA)*¹³ specialization courses with military physical education officials / instructors (for petty officers, non-commissioned officers and soldiers/volunteer ranks), in order to place certified coaches, "from the company level to the central management / educational structure level, with attributions that require different levels of competence"¹⁴, so that they can lead the general



program of physical training of the military within the subunit. In one of his papers, Professor Alin-Dumitru Pelmuș made a comparison between the training of specialists in physical training in the Romanian Army with their training systems in some NATO member armies, concluding that "this way of training the so-called specialist it has serious repercussions on the system and does not fit into the NATO military"¹⁵.

Conclusions

The principles of CrossFit are designed to help the military perform daily movements with greater strength and stability. The unique training helps to avoid boredom and creates an attachment behavior of the military that come to love the training sessions. It offers an excellent alternative to traditional training processes and can help the military to overcome the training plateau, thanks to the use of various movements and the use of high intensity. It is a fascinating approach to the concept of training and all soldiers should try it at least once.

CrossFit training develops a developed mental tenacity in the military to effectively deal with stressors, challenges and pressure (regardless of the prevailing circumstances), an ability to overcome exhaustion in a variety of high-intensity workouts that make up most of the systematic CrossFit training processes. Training hard and not giving up develops a form of mental toughness and endurance that fits perfectly into the character of the fighter.

Performing physical activity in the military with the mentality of being competitive, either fighting for the first time against the clock or against other comrades, or to get the best personal physical performance or prizes, is a beneficial thing. Also, being a person who comes quickly to help teammates or other members of the military is a moral trait rooted in CrossFit group training programs. There is nothing wrong with training to be competitive, and being a good team player with colleagues is a necessity for all military personnel.

There is an orientation among the military to want to train, using different means of physical education, to discover the most effective and appropriate training method. Most soldiers want to do everything, not just run the same distance or just do the same push-ups or sit-ups. CrossFit,

one of the biggest fitness trends in recent years, with phenomenal success in promoting the idea of functional full body fitness, allows the military to educate their motor skills and abilities without diminishing the idea of progress, challenge and competition. For the military who practice performance sports or for those who excel in a particular sport, CrossFit can be a solid foundation of general training. The image of CrossFit is that of high-intensity workouts, and it is true that it is not ideal for the weakest in terms of fitness or for those who want to just run lightly and sweat as much as possible less.

Of course, the military does not have to become the largest affiliate of CrossFit in the world, but there are certain means, principles, and methods that the CrossFit community uses to accomplish its goals and that military physical education would could easily take over and integrate into the physical training of the military. This would improve the path that the army has already started by introducing the new concept of physical education and sports in the Romanian Army, building a stronger, better and more physically fit army.

NOTES:

- 1 <http://CrossFit.com>, accessed on 07.11.2021.
- 2 B. Mitchell, "CrossFit workout craze sweeps the Corps", *Marine Corps Times*, June 22, 2008, p. 12.
- 3 G.C. Ciapa, *Guidelines and opportunities for physical training of the military*, "Carol I" National Defence University Publishing House, Bucharest, 2019, p. 79.
- 4 https://ro.hrvwiki.net/wiki/Metabolic_pathway#Major_metabolic_pathways, accessed on 07.11.2021.
- 5 <https://www.mensjournal.com/health-fitness/metabolic-conditioning-the-key-to-better-performance>, accessed on 07.11.2021.
- 6 In English: "Workout of the Day", abbreviated WOD.
- 7 <https://journals.sagepub.com/doi/full/10.1177/2325967114531177>, accessed on 08.11.2021.
- 8 <https://www.nbcnews.com/better/lifestyle/what-crossfit-it-right-you-here-s-what-you-need-ncna1070886>, accessed on 08.11.2021.
- 9 I. Andrei, *The importance of physical training in the process of military training*, "Carol I" National Defence University Publishing House, Bucharest, 2015, p. 24.
- 10 <http://fitworkshop.com/what-is-crossfit>, accessed on 11.11.2021.
- 11 <https://garagegympower.com/crossfit-beginners-guide>, accessed on 11.11.2021.
- 12 https://blog.feedspot.com/crossfit_blogs, accessed on 10.11.2021.
- 13 <https://unap.ro/index.php/ro/facultati-si-departamente/centrul-de-pregatire-a-cadrelor-militare-in-domeniul-educatiei-fizice-si-sportului-in-armata>, accessed on 12.11.2021.



14 A.D. Pelmuș, *Military physical education – past, present and perspective*, "Carol I" National Defence University Publishing House, Bucharest, 2019, p. 69.

15 *Ibidem*, p. 70.

REFERENCES

*** *Military Physical Education Regulations*, Publishing House of the Technical-Editorial Center of the Army, Bucharest, 2013.

Andrei I., *The importance of physical training in the process of military training*, "Carol I" National Defence University Publishing House, Bucharest, 2015.

Băițan G.F., *Admission to military educational institutions from the Ministry of National Defence – sports tests*, "Carol I" National Defence University Publishing House, Bucharest, 2020.

Ciapa G.C., *Guidelines and opportunities for physical training of the military*, "Carol I" National Defence University Publishing House, Bucharest, 2019.

Gale C., *1600 Wods – 7 years of tried and tested functional fitness programming*, Lulu.com, Paperback, 2020.

Madden R., *CrossFit: Military CrossFit Workouts for Beginners – Strength and Endurance Training*, Kindle Edition, 2016.

Mitchell B., "CrossFit workout craze sweeps the Corps", *Marine Corps Times*, June 22, 2008.

Pelmuș A.D., *Military physical education – past, present and perspective*, "Carol I" National

Defence University Publishing House, Bucharest, 2019.

Wayne V., *CrossFit: The Beginner's Guide: Exercises and Techniques to lose Weight and Gain Ultimate Strength*, Kindle Edition, 2016.

Williams Tj., *Cross Training: 1,000 WOD's To Make You Fitter, Faster, Stronger*, Createspace Independent Publishing Platform, Scotts Valley, California, US, 2015.

https://ro.hrvwiki.net/wiki/Metabolic_pathway#Major_metabolic_pathways

<https://www.mensjournal.com/health-fitness/metabolic-conditioning-the-key-to-better-performance>

<https://journals.sagepub.com/doi/full/10.1177/2325967114531177>

<https://www.nbcnews.com/better/lifestyle/what-crossfit-it-right-you-here-s-what-you-need-ncna1070886>

<http://fitworkshop.com/what-is-crossfit>
<https://garagegympower.com/crossfit-beginners-guide>

https://blog.feedspot.com/crossfit_blogs
<https://unap.ro/index.php/ro/facultati-si-departamente/centrul-de-pregatire-a-cadrelor-militare-in-domeniul-educatiei-fizice-si-sportului-in-armata>

<http://CrossFit.com>
<https://www.nbcnews.com/better/lifestyle/what-crossfit-it-right-you-here-s-what-you-need-ncna1070886>