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PERIODIZATION OF TRAINING IN THE NAVAL PENTATHLON FOR ATHLETES FROM THE “MIRCEA CEL BĂTRÂN” NAVAL ACADEMY TEAM

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Abstract

Aim. The aim of this paper is to highlight the importance of training periodization for naval pentathlon athletes. The purpose of the research was also to create and implement in the military student program a scientific training plan specific to the naval pentathlon, which would lead to optimal results in order to participate in an international championship.

Methods. We searched the following computerized databases: Google Scholar and profile websites to collect recent data following organization of training during a macrocycle, relating athletes' preparation to the international competition system.

Results. Accommodation mesocycle = 4 microcycles. The means used during this period will be mostly general in nature, but specific exercises of a utilitarian nature borrowed from naval pentathlon disciplines will also be used, but without any level of complexity. The results of the research can represent at the same time a solid basis and an efficient set of means for achieving a high level of training of the psycho-motor capacity and effort of the military personnel in the naval forces.

Conclusions. Achieving sports performance, which interests us and also represents the main objective in any sport, requires, in addition to optimal planning and scheduling of training, the efficient management of all factors that, in various forms, influence the athlete's evolution.

Keywords: sports training, periodization, naval pentathlon.

Introduction

Achieving performance in the naval pentathlon, for athletes of the “Mircea cel Bătrân” Naval Academy, requires a periodization of sports form and motor qualities adapted to the structure of the academic year (courses, exam sessions, vacation periods) and correlated with the daily schedule of students within the unit. Study of the specialized literature; analysis of the efficiency of the planning developed by monitoring the periodic results of the athletes. The research carried out materialized in the development and application of training plans during a macrocycle, structured in three mesocycles adapted to the structure of the academic year and having specific objectives for the evolution of sports form.

Periodization and achieving a high level of training state is a necessary condition, but in order to achieve sports form in the planned period, effective management is needed to ensure the optimization of training and the development of the level of all its components (theoretical, physical, technical, tactical, psychological). In planning and periodization of training, the sequence of phases of sports form must be observed, which, according to Matveev, quoted by V.I. Platonov (2015), are the following: the phase of acquisition, relative stabilization and temporary loss.

The authors A. Dragnea and S. Mate-Teodorescu, analyzing the phasic nature of sports fitness (2002), establish the following three phases: “of obtaining, of capitalizing to important competitions, of losing or organized exit from sports fitness.” These phases, claims the mentioned specialists, “represent an essential characteristic of sports fitness, are determined by the laws of adaptive phenomena of the human body and influence the entire process of programming, planning and directing sports training.”

Periodization, claims T.O. Bompa (2014), “refers to two aspects: the periodization of the annual plan, divides it into smaller phases of training (...) and the periodization of biomotor qualities, refers to the structuring of the phases of training”. The opinion of all specialists is that in the process of periodization of training, the basic rules must be applied in the form of a creative aspect, which is dependent on aspects related to the characteristics of the respective sport, the level of preparation and performance of the athletes, the content of the competition calendar, climatic conditions, technical-material possibilities and recovery. The naval pentathlon consists of five events that require particularly complex skills from the athletes. As basic skills, those specific to swimming, running, rowing, shooting, throwing grenades and applicative-utilitarian skills necessary for the efficient approach of the different moments within the events will be required.

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The duration and objectives of the naval pentathlon periodization will depend on the information coming from a careful analysis of the specific effort of each event, in relation to the level of motor development of the athletes and the real possibilities of adapting to the effort. In addition, an objective characterization of the naval pentathlon events will help us achieve the periodization of the motor qualities necessary to achieve sports form for the planned periods. An optimal periodization for each sport, with precise data on the time required for optimal growth in fitness and athletic form, is not yet accurate. Individual characteristics, psychophysiological qualities, diet and recovery increase this difficulty.

Methods

In naval pentathlon, studies establish the following organization of training during a macrocycle, relating athletes' preparation to the international competition system:

- ✓ accomodatin mesocycle, with the objective of developing general effort capacity, combined motor qualities and the formation of utilitarian and applicative skills specific to naval pentathlon events. General exercises and specific utilitarian exercises will be used for this purpose. This adaptation period is also a good time to analyze the athletes' motor capabilities and develop individualized training programs depending on the predominant motor skills: from the swimming, athletics or water sports group. Following the selection, the coach must establish individualized objectives, taking into account the motor capacity of each athlete.
- ✓ basic mesocycle, with a duration of 4 weeks, which aims to permanently improve physical, technical and psychological training, using high volumes and intensities, adapted to the athletes' recovery possibilities. To conclude the basic mesocycle, general and specific control norms will be established for each event.
- ✓ preparation and control mesocycle, lasting 13 weeks, aims to orient training towards a competitive aspect. Training will be planned in full, combining physically demanding tests with technical tests or tests that require sustained mental effort;
- ✓ the pre-competitive mesocycle of 4 weeks will have large and maximum exercises planned. The emphasis will be placed during this period on training with a high stress coefficient, alternating with optimal recovery. Training is carried out in full, requiring all components of sports training;
- ✓ the competitive mesocycle coincides with the competition period, and the effort required is commensurate with the level imposed by the competition. Restoring the body after the competitive effort of each test and maintaining sports form are the most important objectives of this period.
- ✓ the transition or recovery mesocycle, lasting 2 weeks, must lower the body's stress level, achieving a controlled withdrawal from sports form through exercises low in volume and intensity and as much as possible oriented towards complementary sports or activities.

In organizing the training macrocycle in naval pentathlon, it is important to take into account the following aspects:

- the objectives of each mesocycle should be established according to the competition calendar and adapted to the athlete's real, individual possibilities of adapting to the effort;
- the management of the effort parameters should be done in such a way that the training has a continuous and ascending character by permanently harmonizing the balance between volume, intensity and complexity;
- the necessary recovery is ensured by adequate means and periods.

The microcycles planned during the annual training period are characteristic in terms of volume, intensity and objectives of each event and sub-period. In the case of the naval pentathlon with a team of student athletes, the microcycles are organized over 5-day periods, to facilitate the qualitative aspect of the training and optimal recovery.

For the month of October, the acclimatization period, the microcycles used will be acclimatization microcycles, specific to the adaptation of the body and its preparation for the intense efforts that will follow during the basic training period, planned to take place in the next 4 - 6 weeks. In the following periods, during the preparation and control mesocycle, shock-type microcycles will be used, the objective of which will be to further stimulate the athlete's adaptation, by alternating with adjustment microcycles, in which the following will be pursued: the development of certain elements characteristic of the competitions and the optimization of the technical details specific to each naval pentathlon event. Also, the role of these microcycles is to bring all the components of sports training into an efficient system, from a functional point of view.

Competition microcycles coincide with the competition period, but are also planned during the training and control mesocycle in order to analyze the athletes' progress or response to the training effort. Usually, depending on the specifics and importance of the competition, such a microcycle lasts 3-5 days with one day for each competition event in the case of world or European competitions and with the organization of two events per day in the case of zonal competitions. Recovery microcycles are planned after training periods with high volume and intensity and immediately after the competitions in May and August, competitions planned annually within the naval pentathlon.

The annual training period will include a periodization of the motor qualities necessary for the naval pentathlon events. Thus, we will have a periodization of strength and a periodization of endurance, the basic motor quality in all five events. An optimal aerobic endurance will facilitate the achievement of high performances for all moments of the military pentathlon events, especially for those that require high-level attention and concentration.



The swimming events contain moments in which the athlete must dive and swim underwater, undress, retrieve the dummy from 3.5 m deep or pass under the obstacle. Good aerobic endurance will facilitate the achievement of performances by optimizing these moments.

During precision grenade throwing and shooting with a small caliber weapon, misses will be eliminated or minimized if the athlete's body has an optimal recovery after the demands of the amphibious cross-country event. Jumping from high obstacles (between 2 and 4m) in the obstacle course event requires strength specific to these moments.

The seamanship event requires, in addition to the conditional qualities of endurance and strength, a high level of coordination to maintain the optimal direction of travel, position and balance in the boat, accurate execution of stops and turns now required by the event, as well as correct assessment of distances.

Coordination and mobility are two other important motor qualities for achieving performance in the naval pentathlon. The high level of coordination of athletes will facilitate the execution of technical elements with greater ease, precision and efficiency. The optimal approach to technique requires good specific coordination, and this includes the development of coordination together with other biomotor qualities depending on the characteristics of the respective sport.

In conclusion, the periods of the annual training program will include, for the necessary motor qualities, moments planned with the following purpose:

Strength:

- ✓ anatomical adaptation, planned during the general training period;
- ✓ development of maximum strength, planned during the specific training period;
- ✓ conversion of strength into power and muscular endurance, planned towards the end of the specific training period and the pre-competitive period;
- ✓ maintenance of the level of motor quality, necessary to achieve throughout the competitive period;
- ✓ compensation of strength, which coincides with the transition period.

Endurance:

- ✓ development of aerobic endurance throughout the general training period;
- ✓ development of aerobic and anaerobic endurance, specific endurance, planned for the specific training period;
- ✓ maintaining an optimal level of aerobic endurance for the end of the transition period.

Coordination:

- ✓ improving the coordination of different analyzers with the locomotor apparatus;

In order to maximize performance, training periods must contain carefully planned objectives of psychological preparation.

Psychological preparation for the general preparatory period will be oriented towards the evaluation of current mental skills and learning other new skills.

The specific training period will include, from the point of view of psychological preparation, the development of the set of mental skills necessary to achieve the training objectives. Skills such as visualization, mental repetition, relaxation techniques and energy control, self-regulation will be used. In the pre-competitive period, psychological preparation will be developed through techniques of mental repetition, energizing, self-encouragement, simulation, and specific adaptation.

The competitive period is a period with a maximum level of stress, amplified due to the pressure created by the specifics of the competition (Teodorescu & Ganera, 2013).

The essence of psychological preparation for the competition consists in the formation of certain states of preparation – sets of cognitive, affective and volitional attitudes that are formed spontaneously or directed in relation to the tasks in the competition. The athlete and the coach, relating them to the requirements of the competition and the individual peculiarities of the athlete, can direct these states.

The main objective of psychological preparation during the competitive period is the formation of characteristic attitudes towards the competition (this involves strong opponents, referees, the public, the field and new materials), in order to increase the potential for mobilizing the physical and mental energy of athletes.

At this moment, adaptation skills to strong opponents, new route conditions and different weather conditions are necessary. It will also require a strong capacity for stress control, energizing in critical moments, mental repetition, positive thinking, motivation and optimism,.

P. A. Rudik, quoted by Epuran (1993), believes that in psychological preparation for a particular competition, it is important to aim for:

- ✓ awareness of all aspects characteristic of the upcoming competition, which could positively or negatively influence the athlete;
- ✓ detailed knowledge of the opponent;
- ✓ improvement of motor skills and testing them at the level required by the respective competition;
- ✓ development of an active attitude oriented towards achieving performance;
- ✓ formation of a positive attitude;
- ✓ preparation for voluntary maximum effort.

Specific objectives of the training periods

The objectives of the annual training periods have a common consensus for most specialists in the field. For the naval pentathlon, we identified the following objectives per training period:

The preparatory period will contain exercises whose purpose will be represented by increasing the possibilities of functional components, which represent the basis for the development of complex qualities specific to naval pentathlon events. The objectives of this period arise from the training components and are the following:

- ✓ development of general physical fitness;
- ✓ improvement of motor qualities endurance and strength;
- ✓ formation of the necessary mental traits: balance, concentration capacity, energy mobilization, relaxation and control capacity, motivation, confidence;
- ✓ formation, development and improvement of motor skills; characteristics of the events and specific moments within them;
- ✓ education of athletes in the theory and methodology of training specific to each event.

It is very important during this period to ensure an optimal level of physical preparation because this will represent the foundation for the development of good specific preparation that will target all other components of training.

The exercises that will be used during this period are different from those characteristic of the competitive period, through the objectives pursued. During this period, the priority will be the development of general movement capacity, the development mainly of speed and skill qualities, parallel to the concern to systematically increase aerobic possibilities

Towards the second part of the preparatory period, exercises will be introduced that favor specific preparation: long jumps, high jumps, landings from high obstacles, throws, climbing, crawling. The intensity during the specific period will gradually increase using high-intensity microcycles, within which maximum intensity lessons will alternate with unloading and recovery ones.

The specific preparation during this period is oriented towards improving the training state materialized through: development of complex motor qualities; improvement of technical-tactical preparation, with an emphasis on the structures that will be applied in competitions; specific physical and competition preparation.

The competition period will have as its main objective the maximization of the athlete's potential, imposed by the nature of the competition, through contact with new opponents, materials and terrains. Its materialization will be achieved following good planning of the preparation and through:

- ✓ permanent optimization of the motor and psychological qualities specific to the naval pentathlon;
- ✓ improvement of the motor skills characteristic of each event;
- ✓ improvement of the competition experience;
- ✓ improvement of the integral preparation;
- ✓ maximization of the effort capacity specific to each event.

The athlete must have the ability to apply in competition, with maximum efficiency, all technical - tactical and psychological knowledge. All components of training must be able to act systemically in order to achieve sports performance.

The competitive period may contain a microcycle of approach (pre-competitive), in which the training effort is slightly reduced in order to achieve specific accumulations of overcompensation ("tapering"). This period of reduced effort provides the time necessary for the healing of microtraumas produced by the high intensity of the demand on the tissues and the restoration of the body's energy reserves.

According to studies, an important change produced by this reduction in effort is represented by the increase in muscle strength, which explains part of the improvement in sports performance.

The optimal application period, experts claim, can be between 4 and 28 days, depending on the sport practiced, and the recommendation following research is that the volume be reduced by up to 30-40%, without changes in the intensity and frequency of demands.

The sudden decrease in effort during this period, by up to 30-40%, can ensure good recovery after working with high volumes and intensities in the previous period. Specialists claim that after 5-6 days with such a reduction in demand, the athlete is in a state of physical and mental recovery and is able to meet new main objectives.

The transition period has as its main objective the complete recovery of the body after the effort during the preparation and competition periods and maintaining the motor capacity at an optimal level. The transition period is also a period that ensures the connection between two macrocycles while ensuring the overcompensation phase for the next phase of effort.

An efficient organization of this period involves the correct choice of the volume and duration of work, the content of the activity, as well as the means used. All of this will contribute to a complete recovery of the athlete's body and achieving a higher level of training (overcompensation) compared to the previous period.

The exercises that will be worked with during this period will mainly aim to maintain the level of development of motor qualities and the energy supply capacity of the aerobic system. The transition period is planned for student athletes during the summer vacation, for a period of 4-6 weeks, depending on the time needed for recovery. It is advisable that in the first part of the transition period, namely a microcycle of 4 - 6 days, we orient our work towards an aspect of active rest, after which these exercises will be combined with work means that will have as their objective the prevention of



visible manifestations of maladaptation. Towards the end of the transition period, the effort will be gradually increased, the preponderance of exercises specific to active rest will decrease, and more general training exercises will be used, facilitating the transition from the transition period to the preparatory period.

Since it is not possible to organize this period in a centralized manner, the means of work will have to be simple and adapted to the material possibilities available to the athletes in the areas where they are established for this period.

Results

Specific tasks and objectives for the training periods

Accommodation mesocycle = 4 microcycles

The means used during this period will be mostly general in nature, but specific exercises of a utilitarian nature borrowed from naval pentathlon disciplines will also be used, but without any level of complexity.

Table 1. Specific tasks and objectives for the accommodation mesocycle

Tasks and goals for athletes	Tasks and objectives for the coach
developing general effort capacity, without performance objective	analysis of the athletes' motor capabilities (initial testing)
development of combined motor qualities	optimization of the coach's knowledge and working methods
ensuring an optimal level of preparation for training, by developing the qualities and training of motor skills necessary to eliminate the risk of injury when approaching the applicative routes	development of individualized training programs, depending on the predominant motor skills of the athletes (from the swimming, athletics, or water sports group)
	management of situational factors (funds, availability of equipment and personnel)
	establishment of individualized objectives, depending on the motor capacity of each athlete

Accumulation mesocycle = 6 microcycles

The accumulation microcycle is characterized by medium or high volumes of work. The means and intensity of work will be adapted to the individual capabilities of the athletes so as to avoid their overload.

The duration of this period may be extended in the case of certain athletes if a slow evolution of the level of physical training necessary for the safe development of the specific skills is observed.

Table 2. Tasks and objectives specific to the accumulation mesocycle

Tasks and objectives for athletes	Tasks and objectives for the coach
permanent improvement of physical, technical and psychological preparation, using medium volumes and intensities, adapted to the recovery possibilities of athletes.	for the final of the basic mesocycle, general and specific control norms will be established for each event evaluation of the athletes' mental skills
development of qualities and training of motor skills oriented towards aerobic exercises, strength and basic motor skills;	efficient design and organization of activities, in order to support direct involvement in training
observance of a progressive rhythm of evolution of sports form	stimulating the athlete by setting challenging objectives;
optimal valorization of performance capacity at planned times;	stimulating the athlete by setting challenging objectives;
	optimizing training to capitalize on the athlete's potential.

Transformation Mesocycle – January 13 – April 11 = 13 microcycles

The specific period of the transformation mesocycle is characterized by high work volumes and intensities, applied within the shock microcycles. These will alternate with adjustment microcycles for efficient training management. During this period, we will aim to develop aerobic/anaerobic endurance and muscular endurance, in parallel with the development

of technical skills specific to the five events. Towards the end of the mesocycle, a verification microcycle is planned in which we tested the two groups.

Table 3. Tasks and objectives specific to the transformation mesocycle

Tasks and objectives for athletes	Tasks and objectives for the coach
training sessions carried out at high and maximum volumes and intensities, in order to develop aerobic and anaerobic effort capacity	planning the progressive increase of the work intensity towards a maximum level and orienting the training towards a competitive aspect
consolidation and improvement of skills specific to each event	effective management of stress in training
awareness of the needs for improvement and assuming responsibility for achieving intermediate and final objectives	planning the integral preparation combining physically demanding tests with technical tests or tests that require sustained mental effort
training the ability to apply mental skills and maintaining it at an optimal level	direct involvement in the organization and management of the training, integration of coaching sessions into the training microcycles
awareness of actions in technical preparation through the use of mental training	permanent monitoring of the progress and regulation of the individualized coaching process, in order to obtain the optimal ratio with the established objectives
improvement of concentration capacity for shooting and throwing grenades	permanent harmonization of the training effort with the physiological state of the athletes (monitoring of physiological effort parameters: F.C., lactate)
increasing lactate threshold	optimization of the preparation to capitalize on the performance potential at the planned times

Competition mesocycle – April 13 – May 15 = 5 microcycles (adjustment, mental preparation, coaching, tapering, competition microcycle)

The competition mesocycle contains a shock microcycle in which the intensity is similar to that of the competition. The adjustment microcycles have planned working means to maximize the athletes' psychophysical reserves. The tapering microcycle within the competition mesocycle records a decrease in psychophysical demands in order to obtain an overcompensation for the competition microcycle.

Table 4. Tasks and objectives specific to the competitive mesocycle

Tasks and objectives for athletes	Tasks and objectives for the coach
conducting high-intensity training	identifying all possibilities to maximize performance
maximizing performance through comprehensive training with a high psychomotor stress coefficient	establishing individualized performance objectives together with the athlete
adjusting the technical aspects of training	permanent monitoring of athletes and the team to eliminate factors that may affect the achievement of maximum performance
applying the race schedule in training (specific to the moments for each test, individualized)	analyzing and ensuring all the resources necessary to participate in the competition in optimal conditions
forming a positive self-image by being aware of the successes and performances achieved;[18]	maximizing the athlete's potential through coaching sessions
forming a winning attitude, associated with optimal behavior during the competition	mobilizing the athlete's psychophysical reserves [19]
mastering emotion control techniques	using mental skills for stress management
optimal recovery for the competition in the tapering microcycle	identifying solutions for optimal recovery of athletes, after the competitive effort of each event and maintaining their sports form, in the competitive microcycle



In organizing the training macrocycle in naval pentathlon, the following aspects will be taken into account:

- ✓ the objectives of each mesocycle should be established according to the competition calendar and adapted to the real, individual possibilities of adapting the athlete to the effort;
- ✓ the management of the effort parameters should be done in such a way that the training has a continuous and ascending character by permanently harmonizing the balance between volume, intensity and complexity;
- ✓ the necessary recovery is ensured by adequate means and periods.

The microcycles planned during the annual training period are characteristic in terms of volume, intensity and objectives of each event and sub-period. In the case of naval pentathlon with a team formed by student athletes, the microcycles are organized over 5-day periods, in order to facilitate the qualitative aspect of the training and optimal recovery.

For the month of November, the acclimatization period, the microcycles used will be acclimatization microcycles, specific to the adaptation of the body and its preparation for the intense efforts that will follow in the accumulation period, planned to take place in the next 6 weeks. In the following periods, during the transformation mesocycle, shock-type microcycles will be used, the objective of which will be to further stimulate the athlete's adaptation, by alternating with adjustment microcycles, in which the following will be pursued: the development of certain elements characteristic of the competitions and the optimization of the technical details specific to each naval pentathlon event. Also, the role of these microcycles is to bring all the components of sports training into an efficient system, from a functional point of view.

- ✓ The sequence of lessons within the microcycle of the transformation mesocycle will be as follows:
- ✓ learning and perfecting the technique – medium intensity
- ✓ perfecting the technique in submaximal and maximal conditions
- ✓ specific lessons for the development of anaerobic endurance
- ✓ specific lessons for the development of maximum strength
- ✓ lessons for the development of muscular endurance
- ✓ specific lessons for the development of VO₂ max.
- ✓ specific lessons for the development of cardiorespiratory endurance at medium intensity

The competitive microcycle coincides with the competition period, but can also be planned during the transformation mesocycle in order to analyze the progress or response of athletes to the training effort. Usually, depending on the specifics and importance of the competition, such a microcycle lasts 3-5 days with one day for each competition event in the case of world or European level competitions and with the organization of two events per day in the case of zonal competitions. Recovery microcycles are planned after high-volume and high-intensity training periods and immediately after the May and July competitions, competitions planned annually within the naval pentathlon.

Table 5. The competitive microcycle

Mesocycle	Acomodation				Accumulation					Transformation 1					Transformation 2					Competitional									
Microcycle (5 lessons)	1	2	3	4	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11	12	13	1	2	3	4	5	
Educational activities	courses				vacation				courses		exam session			vacation			courses				vac.		cours						
Calendar	01.11–30.11.2019				02.12.2019–11.01.2020				–				13.01 – 11.04.2020				13.04–15.05.2020				–								
Type	a	a	a	V	j	s	j	s	s	j	s	s	j	j	s	s	j	C	j	s	s	j	V	j	s	j	t	C	
Forms of preparation	Aerobic endurance (medium)	X		X		X		X		X		X		X		X		X											
	Anaerobic endurance					X		X	X			X		X	X	X		X		X	X								
	Andurance Race pace (tempo)											X		X	X	X		X		X		X	X	X	X	X	X	X	
	Strength	X	X		X		X	X	X	X		X		X	X														
	Muscular resistance					X		X	X			X		X	X		X		X		X	X						X	
	Technical training		X	X		X		X	X	X		X		X	X		X		X		X		X		X	X	X		
	Tactical training													X						X				X				X	
	Coordination									X			X	X		X		X		X		X		X	X	X	X	X	
Training type	Mental training									X								X					X	X	X	X	X	X	X
	Cross country	X		X	X			X	X	X		X		X	X	X	X	X		X		X	X	X	X	X	X	X	
	Rowing - seamanship		X		X		X	X	X	X		X		X	X	X	X	X		X		X	X	X	X	X	X	X	
Shooting				X	X		X				X		X	X		X		X		X		X	X	X	X	X	X	X	

Legend:

Cross country – running in varied terrain; Rowing – specific rowing in a two-oar boat and in an inflatable paddle boat; Lifesaving – specific swimming in the lifesaving event; P.O. – specific running to the obstacle course event; Shooting – specific shooting with the 5.6 mm rifle in the amphibious cross country event; Testing – general and specific motor tests, full competition events

Microcycle // type of microcycle – a = anatomical adaptation / accommodation, j = adjustment, s = shock / stress, r = recovery, v = verification; t = tapering; c = competitive

Conclusions

Achieving sports performance, which interests us and also represents the main objective in any sport, requires, in addition to optimal planning and scheduling of training, the efficient management of all factors that, in various forms, influence the athlete's evolution. Maximizing performance requires correct and efficient management of the entire training, materialized in the following actions of the coach:

- ✓ detailed analysis and adequate management of all performance factors;
- ✓ scientific planning and scheduling of training;
- ✓ optimal counseling and directing of athletes in competitions.

The coach's activity of managing sports training in naval pentathlon is a difficult activity, the complexity of which results from the need to maximize the athletes' potential for all five events, within a time limited by the military athletes' schedule. Naval pentathlon as a sports discipline has long been on the army's competitive calendar, but research work is limited. Through this research, I proposed an overall analysis of the naval pentathlon, correlating all aspects of training for the five events. The purpose of the research was also to create and implement in the military student program a scientific training plan specific to the naval pentathlon, which would lead to optimal results in order to participate in an international championship. The results of the research can represent at the same time a solid basis and an efficient set of means for achieving a high level of training of the psycho-motor capacity and effort of the military personnel in the naval forces.

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