

IMPORTANCE OF COORDINATION SKILLS ESSENTIAL PSYCHOPHYSICAL DEMONSTRATED COMPETENCIES AS A MILITARY SPECIALISTS

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Annotation. The aim - to identify the role and importance of coordination abilities in the manifestation of professionally important qualities of psychophysical military experts. It is established that the exercise of general, special and specific coordination abilities provides the most efficient and reliable psychophysical military readiness and suitability to the successful solution of the tasks of combat mission. It is noted that a professionally-applied physical training future military specialist should focus on the development of a certain amount of knowledge and skills. Also - on the formation of professionally important psychophysical qualities that ensure a high degree of readiness of the military to successfully complete the tasks in extreme conditions. Set of system- level structural relationships of mental and physical indicators of the motor and functional fitness, mental processes, and psychomotor ability to control motor actions in different conditions of military occupation.

Keywords: coordination, ability, psycho-physical, potential, experts, military, physical training.

Introduction

Modern professional functioning of military specialists is rather many-sided and has a lot of aspects that sets strict requirements to level of their professional fitness and professionally significant psycho-physical qualities. On the one hand, it is conditioned by presence of many military specialties and on the other – by complicating of military-professional functioning itself [1–3].

Functioning of military specialists of different sub-divisions is that professional sphere, which, on the one hand, is characterized by high social significance and, on the other hand, by extreme conditions, connected with danger, novelty of situation, difficulties, deficit of information, threat of defeat, mental, emotional and physical tension [4, 5].

In extreme conditions of military confrontation, any motion action (motion task) requires from military officer, independent on his profile or position, highly accurate fulfillment of coordinated motion act, which, to large extent, is conditioned by level of psycho-physical fitness in space, time and power parameters of motions [6–8].

In the process of combat task's fulfillment, when stimulus, forcing to motion action appears quite suddenly and requires urgent response, effectiveness of psycho-motor actions is determined by processes, which are in the base of quick and correct taking of decision [9, 10].

In this connection, mechanism of taken decision's realization (formed motion program) is conditioned by many factors, but its resulting effectiveness depends on motion *coordination abilities (CA)*, which determine:

- Ability to learn movements (quick mastering, coordination of new motion actions and integration them in complex);
- Ability to quickly and effectively solve new, suddenly appearing motion tasks;
- Readiness to optimal control and regulation of motion action [11];
- Ability to reconstruction, changing of already mastered motion actions or to switching from one action to other in compliance with changing situation [12].

In works of well-known specialists there is presented foundation of idea about five “fundamental” CA (P.Hirts, 1985), seven CA, significant in outdoor games and other kinds of sports (D. Blume, 1983), 11-13 CA, which determine victory in outdoor games and martial arts (G. Shnabel, 1973).

Multi-level hierarchy of system of construction and control of human movements includes also ideas, formulated by N.A. Bernstein [13]. Supplementing him, V.I. Liakh divided coordination abilities into two big classes: class with leading level C, supported by lower background levels B and A (body dexterity); class with leading level D with background levels C, B, A, which work in different combinations (class “subjective” or “ class of “arms” dexterity). In this class he marked out 16 groups of CA [11, 14].

Further researches permitted to mark out general, special and specific kinds of CA [14]:

- *General CA* shall be understood as potential and realized human abilities, which determine readiness to optimal control and regulation of different by origin and sense motion actions;
- *Special CA* are abilities, relating to unanimous by psycho-physiological mechanisms groups of holistic, purposeful actions, systemized by their increasing complexity;
- *Specific CA* are abilities, which determine readiness of an individual to optimal control and regulation of certain specific tasks for coordination (rhythm, responding and so on).

Recent time, increasing of coordination abilities level of military specialists of extreme profile has been regarding as one of perspective directions in system of professional-applied physical training [9, 15–20], as far as it permits to significantly improve effectiveness of professional functioning in conditions of extreme confrontation in non-standard situations with deficit of time and in restricted space. High level of components' mobilization in structure of

coordination fitness ensures effective psycho-physical readiness to military service, especially in detachments of special purpose.

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Purpose, tasks of the work, material and methods

The purpose of the research is determination of role and significance of coordination abilities in manifestation of professionally important qualities of military specialists.

Results of the research

In the frames of our purpose we regard possibilities of manifestation of *special coordination abilities* in the process of combat tasks' fulfillment by military specialists:

- Infantry, reconnaissance parties and other sub-divisions have to cover tens of kilometers (quick march on enemy's territory) in combination with different *cyclic and non cyclic motion actions*: skiing (walking), running, in half-bent position, crawling, climbing, overcoming of different obstacles, with it, doing it under influence of unfavorable climate and psycho-physiological factors (cold, heat, hunger, thirst, absence of sleep);
- In the process of assault tasks' fulfillment, with seizure of high buildings (overcoming of obstacles, concrete walls) the most important quality is *ability to non locomotion body movements in space* on the base of different acrobatic and gymnastic techniques. With it, in all methods of building's seizure it is necessary to fulfill different psycho-motor movements on rope and ladder for optimal achievement of the aim;
- When driving military machinery it is necessary to execute purposeful and accurate movement (pointing, touching), connected with *manipulating of different body parts in space*. For example, pilot, having noticed deviation from his course, executes necessary movement in space with pedals and control column. Such acts are responsible for movements by mechanism of sensorimotor coordination;
- In conditions of temporary indefiniteness one has to very quickly and coordinately execute different *motion actions with traveling of objects in space* (putting arm from one hand to other, installation of grenades, lifting and throwing of heavy objects) and only in this case, with deficit of time, enemy could not manage to realize some counter actions;
- One of methods of enemy's neutralizing is using of different grenades, that is why one of the most important professional qualities is *ballistic (throwing) actions for distance and strength*, for example, throwing of grenades using different techniques: with straight hand from aside, (from below) and from oneself; from behind the back over shoulder; standing on the spot; walking, standing on one knee; from lying position;
- When realizing defensive techniques and counterattacks different kinds of cold steel are applied (knife, sapper shovel, bayonet, butt of arm) in this connection an important quality is *ability to throwing actions for accuracy and preciseness*, because just upon this coordinated motion action result of martial fight depends on;
- One of the most important qualities of military officers, independent on his profile is *movements, connected with pointing at target* both when shooting with pistol, machine gun and when shooting with self-propelled gun, tank or aircraft;
- For capturing of enemy's object it is necessary to skillfully and without noise remove a sentry (at check point, and observation tower). One shall be able to reach sentry being invisible, using *movements, copying enemy's movements*;
- For neutralizing of adversary in hand-to-hand fight in *attacking and counterattacking actions* with arm and without arm it is necessary to be able for complex coordinated quick movements, ensuring application of critical blows;
- In actual combat actions all military sub-divisions (tank, air forces, infantry, rocket forces, signalers, scouts) shall act coordinately in conditions of temporary and alternative indefiniteness both in *attacking and defensive actions*.

Rather important role is played by *specific coordination abilities* in combat activity of military specialists. They can be regarded in the following way:

In conditions of temporary or alternating indefiniteness (in bright blinding sun light, with low illumination of premise, in the night in full darkness and in the light of projectors) military officers shall be able *to orientate in space*, e.g. exactly determine and timely change position of body and fulfill movements in required direction (pressing on trigger, fulfillment of different cyclic and not cyclic movements in zone, restricted by marking out, wire; fulfill certain wrestling techniques; fulfill jumps for accuracy and different throwing actions to target; observe front line of enemy, see contours of obstacles, trenches, and silhouettes of fire posts with visual benches. Having familiarized with situation by map it is necessary to reproduce the idea of future battle, general configuration of battle orders and without difficulties reproduce location of separate sub-divisions and their battle orders;

For ensuring of military service effectiveness in different conditions it is necessary to be able for exact reproduction, differentiation, measuring and estimation of space, time and power parameters of movements. Just this ability conditions highly saving character of space (joint angles), power – strain of working muscles and time (sense of time) parameters of military officer's movements. For example, in the process of fulfillment of combat tasks in different time of day or night military specialist (sapper, pilot, scout, paratrooper) shall have fine muscular and tactile senses, fine visual and hearing perception, feeling at a distance, sense and differentiation of balance, adaptation of visual analyzer to

darkness (signalers, border guards and other specialists);

Simple and complex kinds of perception acquire special significance (*ability to quick responding*), videlicet ability to quickly and accurately execute holistic short-term movement, responding to known or unknown signal by body or by its part (for example responding to hearing, visual or tactile signal, response to moving object). For example, in sniper's actions the most important is response to time and adversary's movement; the same ability is a dominating one in actions of operators of complex dynamic objects (radio operator concentrates correctly on received signals, in order to understand them correctly, write them and accurately fulfill responding action, for example switching of a toggle switch by expected signal). All these indicators are of great importance not only for sappers, tank men, drivers or pilots, but for gun layers and operators of other weapons;

All military specialists have to be capable to quickly re-adjust from one activity to other; from immovable position to quick run; from quick running or quick overcoming of obstacle to instant stop, keeping balance with it in different positions (lying, squatting or standing). In this connection *ability to adapt and readjust motion actions* is rather important, because it will permit quickly transform trained forms of movements or re-adjust from one kind of movements to other in compliance with variable conditions. For example, pilot, making turn with a little list and losing height, will fulfill quick re adjustment of hands' movements and with big list, owing to the so-called "change of steering" he will do additional movements by feet. In all such cases functioning is built by schema of sensorimotor response of re-switching, which is not based on motion patterns;

In control of complex military stationary or mobile equipment great role is played by human factor, which is expressed in *coordination and integration of separate movements and actions in holistic motion combinations*, pointed at solution of headquarters' tasks (in aircraft, in tank at control panel of rockets, in radar station);

During fulfillment of different tasks it is necessary to endure long term static and dynamic strain: keep posture balance in *static or dynamic positions of body* in movement; for hours sit or lie (often in bent or other inconvenient position) very close to enemy, fulfill observation being on wall, on moving military machinery, standing still or in movement hold different kinds of arm by different methods (when, for example jumping form different obstacles);

With fulfilling of some professional motion actions it is necessary to manipulate *exact observance and reproduction of the set rhythm* of movements. Rhythm control is professionally important, first of all, for radio operators, dispatchers, signalers and other officers of operator-technical specialties;

In fulfillment of long term (for hours) attacking or defensive actions, connected with driving of military machinery (tank men, pilots, drivers of self-propelled guns) an important role is played by *organism's stability under different vestibular irritants*;

And at last also important quality of military specialist is ability to quickly adapt to privations, to be satisfied with maximally short periods of rest; sometimes only after partial recreation, owing to *ability to maximal coordination of relaxing and contraction of muscles at required moment*, be capable to continue fulfillment of combat tasks..

Conclusions:

On the base of the above presented it is possible to make the following conclusions:

1. Military-professional activity is a complex, dynamic system of military specialist's interactions with external factors, in the process of which he fulfills combat tasks in extreme conditions; with it each kind of military activity has its own characteristics, content and sets specific requirements to professionally important qualities of military specialist.

2. In military professionalism, in system of readiness and suitability leading component of professionally important qualities of specialists of different Armed Forces' sub-divisions are psycho-physical abilities,, whose level is determined systemic-structural interconnection of mental and physical indicators, which characterize motion and functional fitness, mental processes, psycho-motor functioning and ability to control motion actions in different conditions of military-professional activity.

3. One of professionally important psycho-physical qualities of military specialists are coordination abilities, which ensure integration of mental and physical components of psycho-physical potential. Achievement of high level of such abilities in the process of personnel's training in different military sub-divisions will permit to effectively fulfill combat tasks in real conditions of application of modern weapons and combat machinery.

4. It is necessary to continue researches on development of methodic approaches to improvement of coordination abilities in structure of psycho-physical fitness and suitability of potential military specialists at the stage of initial professional-applied physical training.

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