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DEVELOPMENT OF THE MOTOR CAPACITY LEVEL OF MILITARY FIREMEN BY CIRCUIT TRAINING. PRELIMINARY STUDY

***Chirazi Marin*[1]**
***Loluţă Adrian-Gabriel*[2]**
[1]*"Alexandru Ioan Cuza" University of Iasi, Romania*
[2]*Inspectorate for Emergency Situation ”N. Iorga” MIA, Botosani, Romania*

Abstract. *Physical education and sport in the training of military firefighters within the "Nicolae Iorga" Emergency Situations Inspectorate of Botosani County is an integrated part of the instructive-educational process aimed at training the skills and capabilities of military personnel (non-commissioned officers) in dealing with the accuracy and speed of accessories and fighting equipment, prolonged vigorous actions under high temperature conditions, smoke and toxic gases and other unfavorable factors that occur during the intervention. Physical education is one of the main activities to support the tasks and missions of the inspectorate.*

The scientific problem solved in this article is the experimental argumentation of the sports training methodology in order to establish the level of the motor capacity of the military firefmen within the "Nicolae Iorga" Emergency Situations Inspectorate of Botosani County, Romania in fulfilling their missions, saving the most valuable "life" work.

Keywords: *motor capacity, firemen, circuits, equipment, evaluation, quarterly.*

Introduction. Military Physical Education is the integral part of the instructive-educational process that aims at training the skills and abilities of the military in dealing with the accuracy and speed of the accessories and the fighting technique in the equipment, carrying out vigorous, prolonged actions in high temperature conditions, smoke and toxic gases and other unfavorable factors occurring during the intervention [3].

The importance and actuality of the theme:

- *The specialized physical training* of military firemen within the operational structures of the Ministry of Administration and Interior is one of the main support activities in fulfilling their attributions and missions in order to orient physical activity towards the formation and development of ***motor capacity*** and psychological qualities in the cognitive sphere, volitional and affective to fulfill the entrusted missions [4].

- One of the basic factors for accomplishing many of the driving actions is physical exercise capacity, which generally means the body's ability to perform as much as possible and keep it as long as possible [1, 2]

(1) In order to check the level of motor capacity, the evaluation of the men's operative personnel, falling under the stressed category of physical stress, will be executed on a quarterly basis, by following circuits established by a committee formed at the level of the unit.

(2) Personnel who perform physical training during the work shift shall also check the level of the driving capacities, with at least 4 (four) circuits for each subunit having a similar degree of difficulty, which will be made up of several specific samples, so that the minimum mileage is not less than 5 minutes and the maximum 8-minute scale with at least 8 obstacles.

(3) Circuits and scales shall be established by a commission formed at the level of the unit, which shall consist of the officer responsible for the training of the operational staff, the designated worker with responsibilities in the field of safety and health at work and the sports instructor. Circuits and scales are submitted for approval to the first deputy of the chief inspector and approved by the chief inspector.

(4) All samples are performed with a foot start, a beeper, a competitor on the stopwatch.

(5) It is PROMOVED the military framework that has fulfilled the minimum scale

Research hypothesis

- We proposed to design a program of motorized circuits applied as an independent variable to a group of military firefighters in the year of preparation 2017 (01.01-31.12.2017) on a sample of 321 military cadres.
- Through this work we wanted to demonstrate to what extent the military firefighters are preparing through the complexity and diversity of the physical exercise of the weapon in order to be able to cope with the actions in the case, actions encountered both in the training activity and in the tasks specific to the activity profile: disengagement, medical assistance (SMURD), rescues from different environments.

Purpose of the research: to analyze the level of motor capacity, regarding the evaluation of the men's operative staff, classified in the category of accentuated physical stress (321 non-commissioned officers), which will be executed quarterly, by passing circuits established by a committee formed at the unit level.

Plans / programs of training under 'exercise specific weapons "will design circuits, trails, pathways specific applications firefighters, so that their content to include exercise with equipment and related accessories, to train and improve motion skills and in conditions as close to actual situations encountered on missions and themes of specific samples firefighters: scale window, obstacle course on the 100 meter relay race 4x100 meters carrying device response time allocated under this component is established by each unit, according to the training needs.

Objective research:

a) maintaining and developing the driving capacity of the personnel, in order to achieve an actional autonomy that allows the exploitation of the effort possibilities in different situations;

b) harmonious physical development, maintenance of the optimal health condition and quenching of the organism;

c) development of moral-emotional skills and education of characteristic attitudes;

d) forming the habit of practicing independently and systematically physical exercises and sports, in order to improve motor performance, recovery and recreational or prophylactic purposes;

Research Methods:

I. Verbal methods

a) The explanation method;

b) The conversation method.

II. Intuitive methods

a) Demonstration

- the direct demonstration

- median demonstration through: plans, sketches, technical means.

b) Observation of execution of other subjects.

III. Practical methods

a) Exercise method

- the process of the decomposed exercise;

- the process of the global exercise;

- the procedure of the global exercise under difficult conditions;

b) The method of practicing

- independent;
- with partner.

1. Conditions for running the training and evaluation circuit

The circuit consists of 8 samples, which must be continuously and continuously fulfilled on a surface, usually concreted.

Each sample of the circuit must be finished before a new sample is started.

For safety reasons, it is recommended that performers do not run during the circuit, as they have to strain their effort during exercises, taking into account the personal level of physical training, environmental conditions and general levels of fatigue.

Rest periods consist of walking on distances of 20 m or 40 m, being incorporated in each sample, to regain normal respiratory rate and restore the body.

To achieve the circuit, the performers wear and use all the equipment: the Nomex waterproof suit, boots / protective boots, protective gloves, safety belt and compressed air breathing apparatus.

Before the circuit starts, the valuer checks the equipment of the personnel as well as the air reserve.

2. Running the training and evaluation circuit

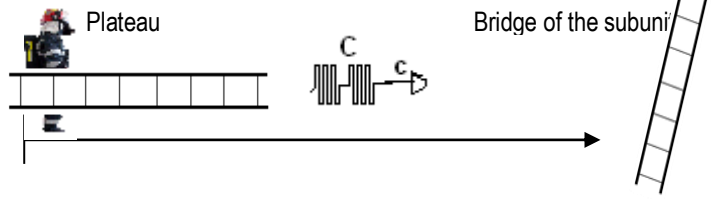
a) at the "start" command, the evaluator starts the stopwatch and the firefighter begins the execution of the samples in the order presented;

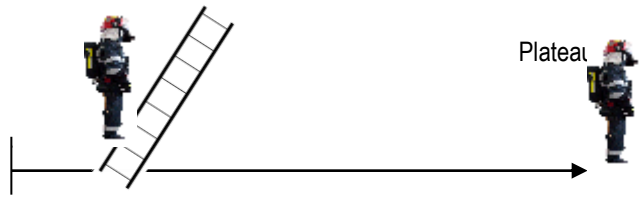
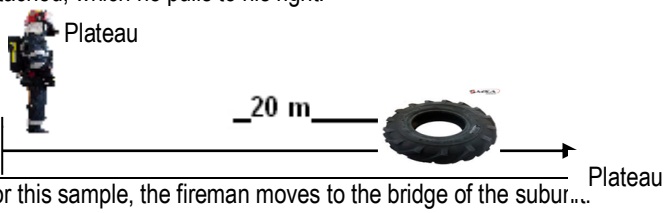
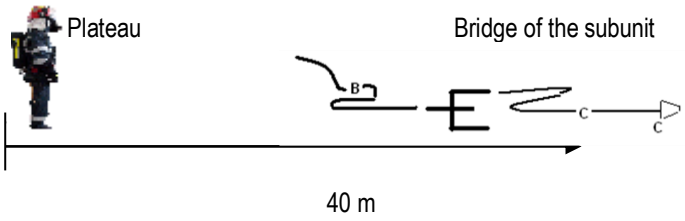
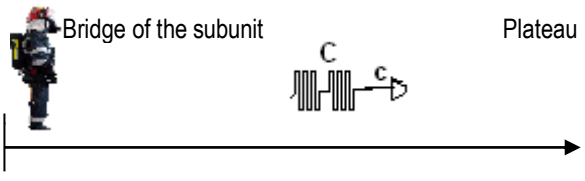
b) during the performance of the tests, the evaluator may encourage the firefighter to complete the circuit, emphasizing that the "walking" from 20 m and 40 m between samples is introduced into the circuit to allow the performer to rest;

c) after completion of all circuit tests and as soon as the firefighter has reached the end line, stop the stopwatch and record the final test time;

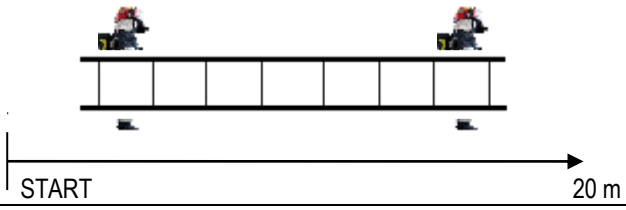
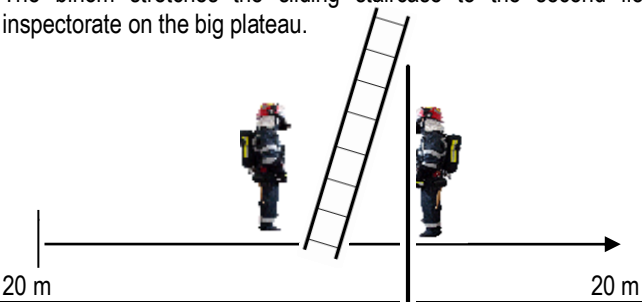
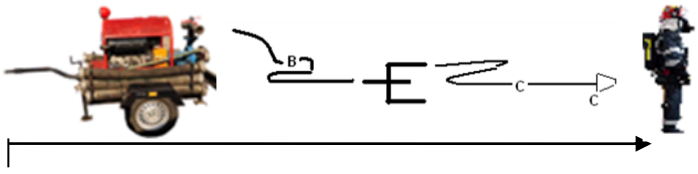
d) the assessment consists in reporting the final time of the examination at the following established scales.

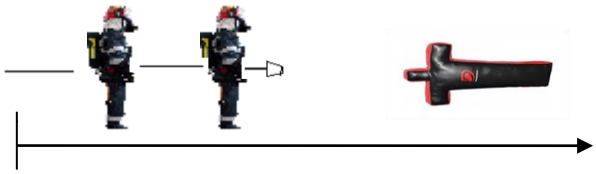
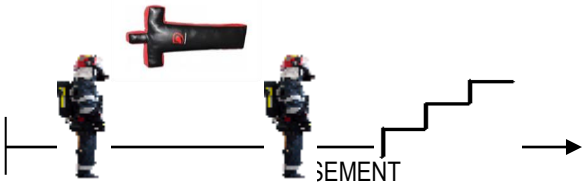
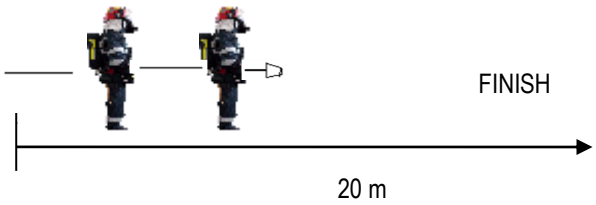
3.A. Samples of the training and assessment circuit (T.I.- initial testing) individually

Nr. crt.	Name of the sample	Sample description	Remarks
1.	EQUIPMENT OF RESTAURANT AND TASKS	In this test, the fire brigade shall be equipped with the breathing apparatus and the air mask from the START line, then carry a B-type hose 	The test ends when the performer is fully and correctly equipped with the breathing apparatus. The NCO executes the necessary operations to start the sample no. 2.
2.	REALIZING A DEVICE WITH TYPE C REFULLING	In this sample, the performer raises two C-type hoses arranged in the ribbon, connected to the Type C discharge pipe and climbs to the roof of the subunit on the sliding ladder where he will leave the discharge pipe. 	The NCO raises two C-type hoses in a ribbon connected to a Type C discharge pipe and moves on the access ladder to the subway bridge where it leaves the device. Upon completion of this activity, the executor starts sample no. 3.

3.	**COATING FROM THE BED WITHOUT THE DEVICE**	The fireman descends from the bridge of the subunit on the plateau without hoses and pipe.  	The test ends when the performer reaches the sub-unit plateau. The Executor prepares to the START line for starting sample no. 4.
4.	**FLOOR EXECUTION**	In this test, the firefighter runs a number of 10 ground floppings.  	The test ends when the performer made a number of 10 flotations. The Executor prepares to the START line for starting sample no. 5.
5.	**TRANSPORTATIO N OF NISIP / MANECHIN HOSE**	For this test, the fireman is asked to lift a hose filled with sand of approx. 35 kg and go on the plateau where he will perform two shifts from the gym to the gateway twice.  	In this test, the firefighter must lift a C-type hose segment filled with sand of approx. 35 kg and go up to the access gate and to the gym twice. The hose will be carried in the hands and not on the back.
6.	**TRAGING A CROWN DRESS**	In this test the firefighter raises the 20m cord from which a rubber is attached, which he pulls to his right.  	The test ends when the performer pulls the rubber up to him. The Executor prepares to the START line for starting sample no. 7.
7.	**HEATING IN THE FLOOR**	For this sample, the fireman moves to the bridge of the subur...  	In this sample, the firefighter moves back to the bridge of the subunit from where it will retract with the previously carried device. Upon completion of this test, the performer is preparing to start the sample no. 8.
8.	**REMOVING THE DEVICE**	In this sample, the fireman must withdraw with the C-line and the discharge pipe at the ARRIVAL line.  	The circuit terminates when the performer reaches the discharge pipe and the hoses are tightened back to the ribbon at the ARREST sign and when at least one foot touches the line.

3.B Samples of the training and assessment circuit (T.F. - Final Testing) binomial

Nr. crt.	Name of the sample	Sample description	Remarks
1.	**EQUIPMENT OF RESTAURANT AND TASKS**	In this test, the binom shall be equipped with respirators and air masks at the START line.  START START	The test ends when binomial is fully and correctly equipped with breathing apparatus. NCOs perform the necessary operations to start the sample no. 2
2.	**TRANSPORTATION OF THE CLEARABLE SCALE**	In this sample, the binomial raises the sliding ladder and transmits it to the designated place, at a distance of 20 m for location on the third floor of the inspectorate.  START 20 m	The binomial raises the sliding ladder and moves 20 m away from the side wall of the inspectorate. Upon completion of this activity binomial begins sample no. 3.
3.	**LOCATION OF THE CLEARABLE SCALE AND FACILITY AT THE FLOOR 2**	The binom stretches the sliding staircase to the second floor of the inspectorate on the big plateau.  20 m 20 m	The test ends when the binomial reached the maximum staircase at the third floor of the inspectorate. The binom moves to the NOVUS motor pump to start sample no. 4.
4.	**TRANSPORTATION OF MOTOPOMP NOVUS**	For this sample binomial transports the NOVUS motor pump from the 20 m line to the START line.  20 m START	The test ends when the binomial brought the NOVUS motorcycle to the starting line. The binomial is preparing at the starting line for starting sample no. 5.
5.	**REALIZING THE INTERVENTION DEVICE**	In this sample, the binomial produces an intervention device with a type C pipe.  START 40 m	In this sample the binomial connects a B-type hose to the pump pump, dispenser, and a C-type C-type hose to enter the sub-base of the subunit. After completion of the sample, prepare to start sample no. 6.

6.	**COOPERATION IN SUBSOL AND SEARCHING FOR VICTIM**	In this test, the binomial looks for a victim locked in the basement, secured with a cord.  	The test ends when the binomial finds the victim Executives continue with sample no. 7.
7.	**EMERGENCY EVACUATION OF THE VICTIM**	In this test, the binom expels urgently the victim from the hostile environment of life  	In this test binomia urgently evacuates the victim from the underground smoke and hand it over to a first-aid crew. At the end of this test binomial continues with sample no. 8.
8.	**FIRE EXTINGUISHING AND REMOVAL FROM THE DEVICE**	In this sample, binomial returns to the basement, clears the fire, and withdraws from the device.  	The circuit ends when the binomial places the Type C discharge pipe at the sign of arrival and at least one foot touches the line.

Results. After the training circuit and the assessment of the level of motor capacity during the 4 quarters, there was an increase in the physical performances and the improvement of the response time during the emergency situations to which the inspector's staff are subjected according to Figure no.1.

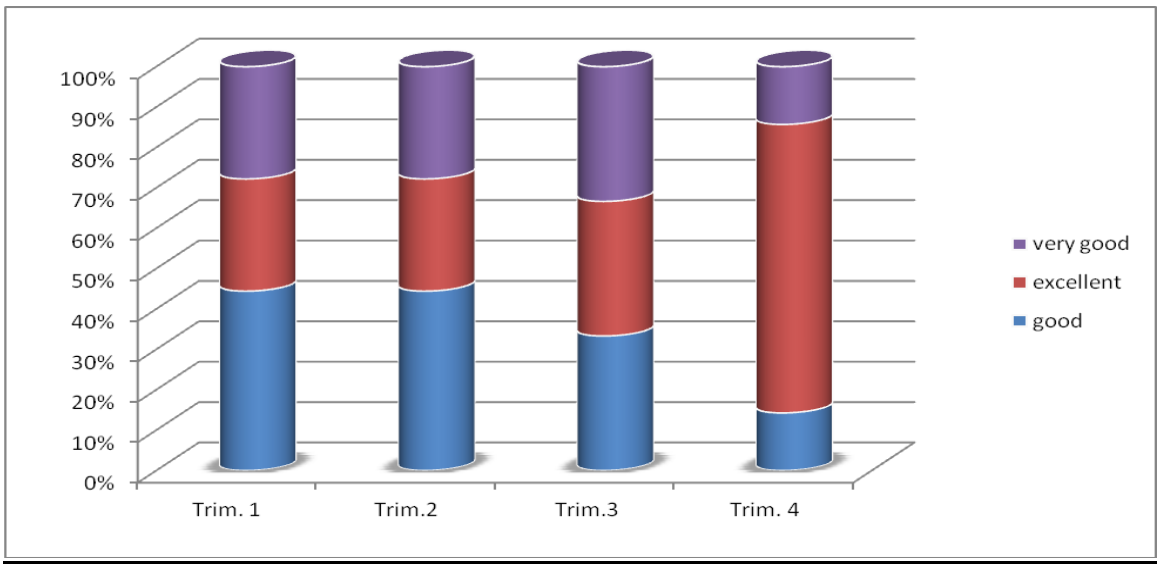


Fig. no.1. The increase in the physical performance

Conclusions:

- consulting specialized works to obtain the necessary information and to carry out the work in a professional manner, the only way to achieve the desired results.
- circling is done on a resting body of body, with repetitions, adapted to the peculiarities of age and experience;
- the circuits are at the beginning at a slow pace, aiming to reach an accelerated pace;
- the need for several hours of training, in a continuous and systematic way.

Thus, specialized physical education is and remains one of the most important segments of continuous training of military personnel, without which it is not possible to conceive the formation of future "rescuers" of the Ministry of Administration and Interior, respectively military firefighters.

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