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# **Model characteristics and senior students training structure in military-sports round**

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**Annotation.** Model characteristics and senior students training structure in military-sports round are being considered in this article. It is settled that the average index in pulling up on the bar is 17.07 times, in overcoming the obstacle bar is 2 minutes 09 seconds, in running 100 meters is 13.01 seconds, in running 3000 meters is 11 minutes 31 seconds, in swimming is 41.01 seconds, in throwing grenades is 40.89 meters and in shooting is 49.27 points. The average sum of points is 3536.03. Stage-by-stage successive training method is used for training in military-sports round. General physical training with the accent on speed and endurance development had been organized for the first 4 weeks. Physical exercises for improvement in throwing the grenade, swimming, running 3000 meters and pulling up on the bar dominated during the second stage of the training (6 weeks). Overcoming the obstacle bar and shooting were added to those physical activities at the third stage.

**Keywords:** military-sports round, model characteristics, training structure, pre-conscription youth.

## **Introduction**

The battles in the Eastern Ukraine increased the society and Ukrainian state attention to the formation of the efficient army. But during recent years a steady trend to the aggravation of pre-conscription youth health has been observed [6; 7; 9; 10; 13; 15]. According to the Ministry of Health Protection of Ukraine data, the prevalence of diseases among boys of 14-17 years old over the past 5 years increased by almost 10%.

The research results of the country scholars [2; 4; 5; 8; 12; 16-18] indicate that one in four young people can't be drafted into the Armed Forces of Ukraine for health reasons, and 70% of recruits do not meet the minimum level of physical fitness.

**The research actuality** is caused by the existing contradictions between the society demands in preparing young people for defending the homeland and lack of physical training to perform military duty; the importance of the process of military-patriotic qualities education in youth and its low efficiency; positive verbal perception of the Armed Forces of Ukraine and actual reluctance to serve in the army.

Military-sports round that is included to the Unified Sports Classification of Non-Olympic Sports is suggested for the improvement of physical and functional preparedness of senior students. Military application heptathlon for pre-conscription youth requires youth ability to perform physical exercises of various difficulties on sports equipment, to overcome various obstacles, to have a wide range of motor skills and to have moral-combat and physical qualities necessary in the military activity and in life. Force applied to pre-conscription youth heptathlon involves pulling up on the

bar, overcoming the obstacle bar, running 100 and 3000 meters, swimming 50 meters, throwing grenades and shooting.

Some aspects of physical preparation in military-sports round were considered in modern scientific studies [1; 3; 11; 14]. But the question of model characteristics in military-sports round and training process structure has not been discussed yet.

**The research objective** is to develop model characteristics and training process structure in senior students military-sports round.

**Research methods:** literature study and analysis, pedagogical observation, testing and mathematical Statistics methods. The experimental part of the research was held at secondary schools number 11, 18, 24 in Lutsk. 526 boys of 15-16 years old participated in the research.

**Research results.** In the common sense “model” means intentionally designed or found analogue of something considered as the original. So “modelling” is the process of such kind models creation and operation with them.

The All-Ukrainian Sports and Athletics Meeting results in military-sports round among pre-conscription youth were used to build the purpose-oriented models of military-sports round participants. Research results are given in the table 1.

Table 1

Model characteristics of All-Ukrainian Sports and Athletics Meeting in military-sports round participants

Kinds of military-sports round	The result of completion	$\bar{X}$	S	$S\bar{x}$	$\bar{X},95\%DI$ (Xmin)	$\bar{X},95\%DI$ (Xmax)
Pulling up on the bar	quantity	17,07	4,26	0,39	16,29	17,84
	points	563,17	116,66	10,74	542,13	584,23
Overcoming the obstacle bar	Minutes	02,09	0,0018	1,635	0,0014	0,0015
	points	575,68	193,91	17,85	540,69	610,66
Running 100 meters	seconds	13,01	0,61	0,057	12,9	13,12
	points	528,53	145,85	13,43	502,21	554,84
Running 3000 meters	Minutes	11,31	1,74	0,16	10,99	11,63
	points	491,48	159,94	14,72	462,63	520,34
Swimming 50 meters	seconds	41,01	12,48	1,15	38,76	43,27
	points	686,52	247,25	22,76	641,9	731,13
Throwing the grenade	meters	40,89	10,01	0,92	39,09	42,69
	points	298,24	237,96	21,91	255,3	341,17
Shooting	quantity	49,27	17,91	1,65	46,04	52,5
	points	392,42	243,68	22,43	348,44	436,38
The total sum	points	3536,03	774,85	71,33	3396,23	3675,84

The comparative analysis shows that military-sports round participants have high results in all kinds of competition. The average result in pulling up on the bar is 17.07 times, in overcoming the obstacle bar is 2 minutes 09 seconds, in running 100 meters is 13.01 seconds, in running 3000

meters is 11 minutes 31 seconds, in swimming is 41.01 seconds, in throwing the grenade is 40.89 meters and in shooting is 49.27 points. The average sum of points is 3536.03.

Correlational interconnections of athletes physical preparedness indices are given in Table 2.

Research results testify that the results of overcoming the obstacle bar and running 100 meters are the most closely interconnected ( $r = 0,54$ ), overcoming the obstacle bar and points received for running 100 meters ( $r = - 0,53$ ), overcoming the obstacle bar and points received for running 3000 meters ( $r = - 0,43$ ). The results in pulling up on the bar and points received for running 3000 meters have the average level of interconnection ( $r = - 0,32$ ), the same with the running 100 meters and points received for swimming 50 meters ( $r = - 0,31$ ), running 100 meters and points received for throwing the grenade ( $r = - 0,32$ ).

Table 2

Interconnections of military-sports round athletes physical preparedness indices

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1	99	-21	32	-25	24	-04	25	-01	15	07	13	13	13	46
2		1	-20	31	-25	23	-04	25	-01	14	06	12	14	14	45
3			1	-51	54	-53	21	-43	09	-18	-10	-27	-07	-08	-51
4				1	-43	38	-19	38	-09	15	31	31	08	10	62
5					1	-98	14	-29	18	-31	-20	-32	-08	-07	-61
6						1	-14	29	-19	32	18	30	06	06	59
7							1	-11	21	09	-09	-08	05	01	-09
8								1	-03	17	11	15	14	11	53
9									1	01	-16	-16	09	07	-14
10										1	22	35	11	09	61
11											1	79	10	11	50
12												1	18	19	66
13													1	93	48
14														1	49
15															1

Notes: zeros and commas are not pointed;

1 – pulling up on the bar, quantity of times; 2 – pulling up on the bar, points received; 3 – overcoming the obstacle bar, minutes, seconds; 4 – overcoming the obstacle bar, points received; 5 – running 100 meters, seconds; 6 – running 100 meters, points received; 7 – running 3000 meters,

minutes, seconds; 8 – running 3000 meters, points received; 9 – swimming 50 meters, seconds; 10 – swimming 50 meters, points received; 11 – throwing the grenade, meters; 12 – throwing the grenade, points received; 13 – shooting, quantity; 14 – shooting, points received; 15 – the total sum of points.

Thus, military-sports round participants are characterized by increased requirements to universal training for all kinds of sports competitions. This is also justified by correlational connections between the kinds of preparedness and the total sum of points received.

The designed models allow to assess the correspondence of physical and technical military-sports round participant preparedness, to define the ways of the further improvement, means of the training process individualization and correction.

The method of logistic regression was used for defining senior students training structure in military-sports round. The results of the analysis show that running 3000 meters, throwing the grenade, pulling up on the bar and swimming have the greatest influence on the total result in military-sports round (table 3).

Table 3

The leading kinds of preparation in military-sports round

Indexes	a	$S\bar{x}$	Pxy	P
Running 3000 meters, minutes, seconds	0,036450	0,013114	7,7247	0,0054
Throwing the grenade, meters	0,018234	0,006634	7,5550	0,0060
Pulling up on the bar, quantity	0,027593	0,009808	7,9141	0,0049
Swimming, seconds	0,017977	0,007768	5,3562	0,0206

Taking into consideration the study results, stage-by-stage successive training method was used. General physical training with the accent on speed and endurance development had been organized for the first 4 weeks. Physical exercises for improvement in throwing the grenade, swimming, running 3000 meters and pulling up on the bar dominated during the second stage of the training. Overcoming the obstacle bar and shooting were added to those physical activities at the third stage.

**Conclusions.** Military-sports round is the effective means of youth physical preparation to the service in the Armed Forces of Ukraine and moral and patriotic personality traits upbringing.

Model characteristics of All-Ukrainian Sports and Athletics Meeting in military-sports round participants are characterized by high results in all kinds of competition. The average result in pulling up on the bar is 17.07 times, in overcoming the obstacle bar is 2 minutes 09 seconds, in running 100 meters is 13.01 seconds, in running 3000 meters is 11 minutes 31 seconds, in swimming is 41.01 seconds, in throwing the grenade is 40.89 meters and in shooting is 49.27 points. The average sum of points is 3536.03.

Stage-by-stage successive training method is used for training in military-sports round. General physical training with the accent on speed and endurance development had been organized for the first 4 weeks. Physical activities for improvement in throwing the grenade, swimming, running 3000 meters and pulling up on the bar dominated during the second stage of the training (6 weeks). Overcoming the obstacle bar and shooting were added to those physical activities at the third stage.



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