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## Features technical and tactical training of volleyball players of high class of different roles

**Abstract. Purpose:** to determine the effectiveness of competitive activity of highly skilled players in different roles. **Material and Methods:** the study used statistical data of major international competitions: the Olympic Games – 2012, the World Cup – 2010, 2014, European Championship – 2010–2014 World League – 2010–2014. A total of 130 games was analyzed. Methods used: analysis and compilation data of special scientific and methodical literature, analysis of competitive activity of volleyball players of high class, pedagogical observation, methods of mathematical statistics. **Results:** it was found that the most effective of attacking actions during one game performed by highly skilled volleyball players of the world, where players first rate of the attack wins in the fourth part 4,2% balls, the second player tempo attack – 4,5%, «diagonal» – 5,1%. **Conclusion:** it is proved that the greatest indicator of the effectiveness of competitive activity has a high-class volleyball players that win throughout the game the second player tempo attack 22,1% of balls, «diagonal» – 18,8%, the first rate players – 16,3%.

**Keywords:** technical and tactical actions, competitive activity, efficiency, highly skilled volleyball players.

**Introduction.** Current state of and prospects for the development of world volleyball determined by the level of perfection of technical and tactical training of volleyball players of high class [1–3, 11, 12]. Modern trends in the world of volleyball indicate that significant changes have occurred in the technical and tactical training of volleyball players of high class, which is concluded in universalization and specialization of players and is characterized primarily by a rational and high-speed implementation of technical and tactical actions in attack [5, 7, 10].

Improving the efficiency of competitive activity by improving technical and tactical actions of volleyball players of high class depends on science-based system for monitoring and analysis of sports training. In the general theory of training of athletes [8] developed an integrated approaches to solving the problem of increasing the efficiency of competitive activity in sports, including volleyball. According to experts [4, 8, 9], necessary to focus on improving the efficiency of technical and tactical actions in attack and defense (group and individual) technical and tactical actions of players of high class, as well as the improvement and development of techniques for the analysis and interpretation of the results of competitive activity.

A.V. Belyaev [2] states that a significant place in the competitive activities of highly skilled volleyball players given to service and receiving the ball with the serve, that affects the organization of effective combinatorial circuits play in attack of rivals. B.A. Artemenko [1] on the basis of video analysis of competitive activity of highly skilled volleyball players of Ukraine and the strongest teams of the world set features tactical constructions in the attack of volleyball players of high class, as well as the frequency of the power service and plans to players of different roles. In-depth analysis of the components of technical and tactical activities in volleyball contained in research A.V. Verteliy [4] E.P. Volkov [5], P.V. Pustoshilo [9] based on the use of pedagogical monitoring of competitive activities of players in volleyball. E.J. Doroshenko [6] in the materials research underscores the need for quantitative and qualitative analysis of indicators of competitive activity in the preparation of players in sports games, including volleyball, which will increase the effectiveness of technical and tactical actions in the attack in different structural formations a year macrocycle.

Currently, in the modern special scientific and methodical literature is almost no data on issues dealing with the generalization of the dynamics of indicators of competitive activity of volleyball players of different roles. Thus, the solution of problem of performance technical and tactical actions in the attack of volleyball players of high class is relevant in scientific terms. To improve the technical and tactical training in volleyball is necessary to use objective indicators of implemented gaming combinations in attack with the help of a comparative analysis of the games of the strongest volleyball players of the world and Ukraine.

**Communication of studies with scientific programs, plans, themes.** Work is executed in accordance with the «Consolidated plan of research in the field of physical culture and sports for 2011-2015». Ministry of Ukraine for Family, Youth and Sports on themes 2.16 «Improving means of technical and tactical training of qualified athletes using modern technology measurement, analysis and simulation of movements» (state registration number 0110U002416).

**The purpose of research** – to determine the efficiency of competitive activity of highly skilled volleyball players of different roles.

**Material and methods:** analysis and compilation data of special scientific and methodical literature, analysis of competitive activity volleyball players of high class, teacher observation, methods of mathematical statistics.

Teacher observation for the competitive activity of highly skilled volleyball players was performed using video analysis of games of the World League volleyball 2010–2014, The World Cup – 2010, 2014, Olympics Games – 2012., European Championship – 2012–2014. Teacher observation for the competitive activity of highly skilled volleyball players of Ukraine was performed by analyzing the competitive activities of athletes on Ukrainian championship in volleyball teams of the 2010–2014 Super League. A total of 130 analyzed games.

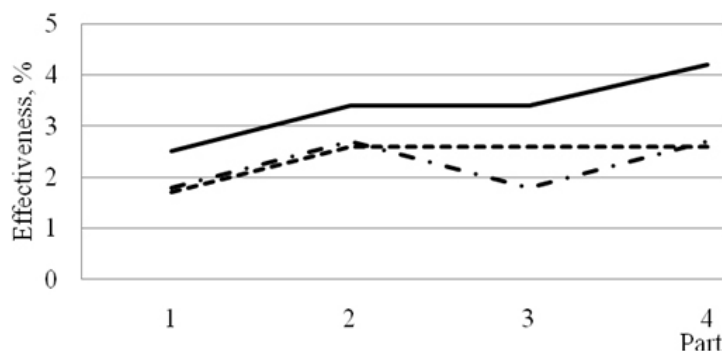
**Results and discussion.** Table 1 shows quantitative indicators of the balls won during one game by highly skilled volleyball players of the world and Ukraine, in the attack of the first pace on the official competition 2010 – 2014.

Analysis of competitive activity of highly skilled volleyball players, shown in Figure 1, allows us to conclude that the effectiveness of the attacking actions of the first pace players is crucial for competitive activity of highly skilled volleyball players of the world and Ukraine.

Table 1

**Number of goals in attack von highly skilled volleyball players first temp attack for the results Official games 2010 – 2014**

Team (number of games)	average values, the number of								Total
	1 part		2 part		3 part		4 part		
	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S	
Highly skilled volleyball players of the world (n=60)	3,5	0,6	4,5	0,6	4	0,6	7,1	0,7	19,1
Yighly skilled volleyball players of the Ukraine (n=40)	2	0,3	3,2	0,3	3	0,3	3	0,5	11,2
Qualified volleyball players team «Burevestnik» (n=30)	2	–	3	0,03	2	0,1	3	–	10



**Fig 1. Performance indicators attacking actions qualified volleyball players (role – «central blocking») on the results of the won score in each part the game:**

- – highly skilled volleyball players of the world;
  - - - - - – highly skilled volleyball players of the Ukraine;
  - · - · - · – qualified volleyball players team «Burevestnik»;
- 1, 2, 3, 4 – part the game.

The results of these studies show that the most effective of the attacking action of the players in first-tempo attacks are highly skilled volleyball players of the world, accounting for 16,3% in comparison with the Ukrainian athletes (team Super League Ukraine – 10%, «Burevestnik» – 9%). A characteristic feature of competitive activity of highly skilled volleyball players of the world and Ukraine is a gradual increase in the number of won balls by players of the first pace attack, unlike players on the team, «Burevestnik».

Thus, the greatest efficiency attacking actions of the players of this role have highly skilled volleyball players of the world observed in the fourth part (6%), the players of Super League teams in Ukraine – 2,6%. The effectiveness of action of the attacking players on the team, «Burevestnik» in the second and the fourth part of 2,7%. This is due to low levels of technical and tactical and psychological preparation for skilled volleyball players, which do not provide the effectively attacking actions of the players of this role.

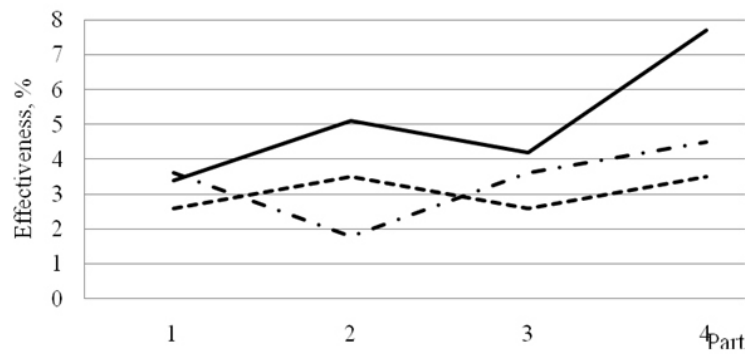
Table 2 shows the quantitative indicators won balls by highly skilled volleyball players the second pace attack on the results of the official competition 2010 – 2014.

Table 2

**The number of won balls in the attack of highly skilled volleyball players of the second tempo on the official Games 2010 - 2014 year**

Team (number of games)	Average values, quantity								Total
	1 part		2 part		3 part		4 part		
	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S	
Highly skilled volleyball players of the world (n=60)	4,3	0,7	6,1	0,8	5,5	0,7	10	1	25,9
Highly skilled volleyball players of the Ukraine (n=40)	3	0,3	4	0,4	3	0,4	4	0,7	14
Qualified volleyball players team «Burevestnik» (n=30)	4	0,1	2	0,3	4	0,1	5	0,1	15

The research results indicate that competitive activity has wavy character, the essence of which is to increase the number of attacking action in the fourth part highly skilled volleyball players of the world in relation to other parts to the game. The effectiveness of the attackers actions of highly skilled volleyball players of the world is 8,5% of the total number of actions performed by the attackers; highly skilled volleyball players of Ukraine - in the second and fourth part – 3,5%; qualified volleyball team «Burevestnik» observed increase of the number of attacking moves in the fourth part of – 4,5%.



**Fig. 2 Dynamics performance indicators attacking action highly skilled volleyball players of the second tempo on the results of the won score in each part the game:**

- highly skilled volleyball players of the world;
  - - - highly skilled volleyball players of the Ukraine;
  - · - qualified volleyball players team «Burevestnik»;
- 1, 2, 3, 4 – part the game

Table 3 shows the quantitative indicators of won balls highly skilled volleyball players the second pace attack (role – «diagonal») on the results of the official competition 2010 – 2014.

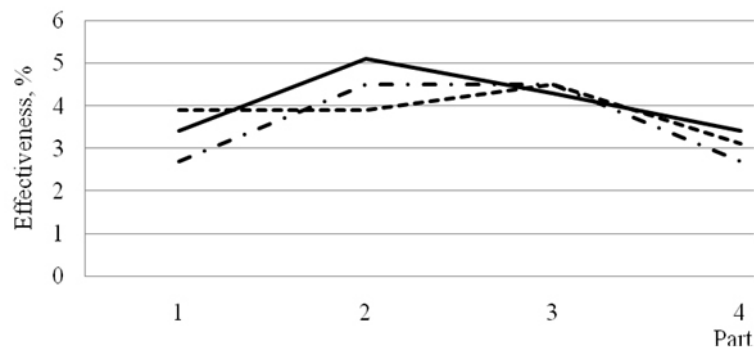
Performance indicators (Fig. 3) in the second part of the study group of players, has most important: highly skilled volleyball players of the world – 5,8%, highly skilled volleyball players of Ukraine – 3,9% of skilled players on the team, «Burevestnik» – 4,5%.

In the fourth part of the game greatest indicator of the effectiveness of the attacking action belongs to the team of highly skilled volleyball players of the world – 3,4%, highly skilled volleyball players of Ukraine – 3,1%, qualified volleyball team «Burevestnik» – 2,7%, respectively.

Table 3

**The number won balls in the attack of highly skilled Volleyball players of the second tempo (role – «diagonal») on the official Games 2010 - 2013 year**

Team (number of games)	Average values, quantity								Total
	1 part		2 part		3 part		4 part		
	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	$\bar{x}$	S	
Highly skilled volleyball players of the world (n=60)	4,6	0,6	6,8	0,7	5,6	0,6	5	1	22
Highly skilled volleyball players of the Ukraine (n=40)	4,5	0,2	4,5	0,3	5,5	0,4	3,5	0,4	18
Qualified volleyball players team «Burevestnik» (n=30)	3	0,2	5	0,1	5	0,1	3	0,1	16



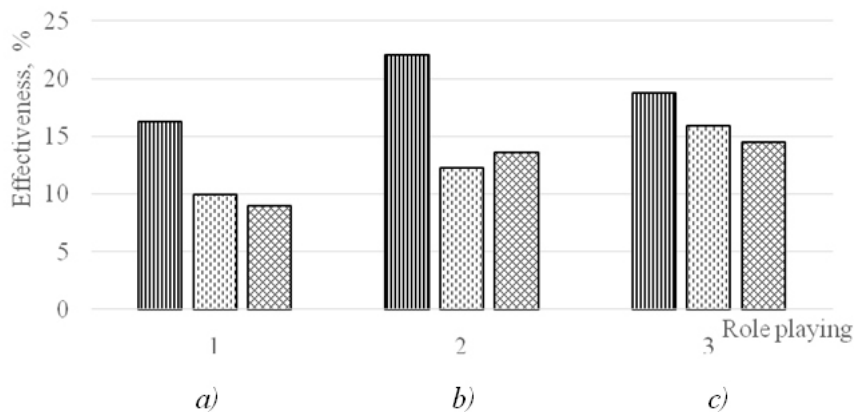
**Fig. 3. Dynamics performance indicators attacking action highly skilled volleyball players (role – «dogravalny») on the results of the won score in each part the game:**

- highly skilled volleyball players of the world;
  - - - highly skilled volleyball players of the Ukraine;
  - · - qualified volleyball players team «Burevestnik»;
- 1, 2, 3, 4 – part the game

A feature of competitive activity of the «diagonal» players in volleyball there is the use of the largest number of attackers blows, running from the back line of the playing court, with the greatest efficacy at highly skilled volleyball players of the

world in the second part – 5,1%, highly skilled volleyball players of Ukraine in the third part of the game – 4,8%, players command «Burevestnik» – 4,5%.

Obtaining objective information allows us to determine the effectiveness of attacking actions of the players of the first and second pace, the values of which are presented in Figure 4.



**Fig. 4. The efficiency of competitive activity of highly skilled volleyball players on the official games 2010-2013r.: a) leading volleyball players of the world; b) highly skilled volleyball players of Ukraine; c) qualified players of the team Super League of Ukraine «Burevestnik»:**

————— – players «central blocking»;  
 - - - - - – players of the second tempo;  
 - · - · - · – players «dogrovalny».  
 1 – players «central blocking»; 2 – players of the second tempo; 3 – players «dogrovalny».

Pedagogical analysis of the effectiveness of technical and tactical actions in the attack, as well as to determine their efficiency in competitive activity of skilled volleyball players allow to state that the most effective attacking actions have «dogrovschiki», who perform the largest amount of technical and tactical actions. The effectiveness of the attacking actions of this role players at highly skilled volleyball players of the world is 22,1%, from highly skilled volleyball players of Ukraine – 12,3%, from the players on the team, «Burevestnik» – 13,6%.

A feature of the «diagonal» players is the use of the to a greater extent attacking actions carried out from the back of the line of volleyball courts, which brings the most benefit. The contribution of the players of this role in the effectiveness of competitive activity of highly skilled volleyball players of the world – 18,8%, in volleyball teams Super League Ukraine – 15,9%, the athletes teams «Burevestnik» – 14,5%, respectively.

Also, we have the tendency to increase the number of attack first-tempo players in the teams of highly skilled volleyball players in the world, where the indicators of efficiency is 16,3%, highly skilled volleyball players Ukrainian win 10% attacks in of the total number of attacking actions, qualified team players «Burevestnik» at 9% cases.

**Conclusions.** Analysis of these data allows to reveal certain patterns that exist in competitive activity highly skilled volleyball players of different roles:

- in the team of highly skilled volleyball players of the world, the role «central blocking» the most efficient of attacking action has in the fourth part of the game is 4,2%, in highly skilled volleyball players of Ukraine – 2,7% of skilled volleyball team «Burevestnik» – 2,6% of the total the number of balls won;
- high efficiency attacking action of «doigrovschik» role is performed in the fourth part of the game highly skilled volleyball players of the world – 7,7%, highly skilled volleyball players of Ukraine – 3,5%, team players «Burevestnik» – 4,5% of the total number of balls won;
- high efficiency attacking action the players of «diagonal» role has in the second part of the game where in the best volleyball teams of the world the highest indicator of ball won from the attacking actions of 5,1%, highly skilled volleyball players of Ukraine - 4,5%, qualified players on the team, «Burevestnik» value – 4,5%;
- the greatest contribution to the effectiveness of competitive activity have «dogrovschiki»: highly skilled volleyball players of the world – 22,1%, highly skilled volleyball players of Ukraine – 12,3%, qualified players on the team, «Burevestnik» – 13,6%.

**Prospects for further research** on this issue will be associated with the development of individual models of technical and tactical training of highly skilled volleyball players based on their playing specializations that will constitute the methodological basis of training and competitive activity of players in volleyball.

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