

COMPARATIVE ANALYSIS OF COMPETITIVE ACTIVITY PARAMETERS OF AMATEUR BOXERS HIGH QUALIFICATION

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Annotation. *Purpose:* analyze competitive activity of boxers of high qualifications in different time periods in the development of boxing. *Material:* 142 analyzed boxing matches at the Olympic Games 2012. *Results:* present indicators of competitive activity of boxers. Shows the comparative characteristics of the battles that took place under different formulas of competitive activity in different periods of the development of amateur boxing. It is shown that increasing the skills of athletes appear to increase the density of hits in combat. As a result of innovations in the rules of the competition, boxing match was different higher intensity combat, attacking actions began to perform at a higher speed mode. *Conclusions:* As a result of the transition to the new formula of fighting to increase the density of the match. Also a 3-fold increase in the number of strikes indicator, surviving on target. Increased efficiency factor strikes, which leads to the expansion of effective technical and tactical actions.

Keywords: boxing, figure, fighting, hitting, competitive coefficient.

Introduction

Analyzing sports activities with the system approach, it appears that the competition is its main and primary component, and training - a secondary component, which serves as a means to prepare for participation in the competition [1, 2]. As a consequence, the study of the requirements of competitive activity in a particular sport they depend on the structure and content of the training process - one of the most pressing problems in the theory and methodology of sports training.

Many authors have noted the need to study the modern requirements for competitive activities, and the establishment of adequate technology to these requirements the training of qualified athletes [1, 2, 3, 5, 7]. Sporting activities boxer aims to achieve victory in a personal duel with his rival and provided the necessary level of technical, tactical, physical and mental preparedness due to the individual characteristics of the athletes, as well as the quality and efficiency of the training process. [7]

Changing the rules of the competition according to the formula of fighting and scoring, the use of electronic refereeing led to a correction method of training, as well as requirements for the athletes' body. [4]

For 12 years, has repeatedly changed the rules of the fights in boxing, which influenced the preparation of athletes for competition. Relevance of our research is to generate new indicators of competitive activity, it is at the present stage of development of boxing.

The studies were conducted in accordance with the theme 2.9. "Customization of the training process qualified fighters" Consolidated Plan of the research work in the field of physical culture and sports in 2011-2015.

Purpose, tasks of the work, material and methods

The object of study - highly skilled boxers.

Subject of research - competitive activity boxers' qualifications.

The purpose of the study - to analyze competitive activity boxers qualifications in different time periods in the development of boxing.

Objectives of the study:

- Get the performance of competitive activity boxers' qualifications at the present stage of development of boxing;

- Compare the performance of competitive activity boxers skilled with the results of previous studies.

Methods:

- Theoretical analysis and synthesis;

- Video;

- Analysis of technical and tactical training of skilled boxers with the help of expert judgment;

- Methods of mathematical statistics.

Organization and methods of the study.

Analyzed 142 bouts boxers qualifications Olympics 2012 while watching a video such fights were assessed technical and tactical indicators of competitive activity:

1) The total number of beats in a fight;

2) the number of strokes per round;

3) the number of beats in 1 minute;

4) the number of strokes, which have reached the goal;

5) the number of beats, not come down to the target;

6) the density of technical actions - the ratio of the number of strokes that have come to the purpose, duration of the fight (in minutes);

7) the coefficient of efficiency of shocks - the ratio of the number of strokes that have reached the goal, the total number of strokes for the fight;

8) to protect the safety factor - the ratio of the amount before reaching the target attacks, the total number of strikes per fight.

The obtained data were processed by methods of mathematical statistics, namely, using a standard computer program "Statistica 7" of StatSoft. We analyzed the following parameters: the arithmetic mean, the significance of differences by t-test Studenta.

Results of the research

Table 1 presents data on the performance of competitive activity highly skilled boxers who fought on different formulas:

- 3 rounds of 3 minutes (60 years);
- 3 rounds of 3 minutes (90 years);
- 5 rounds of 2 minutes (1997);
- 4 rounds of 2 minutes (1998-2000);
- 3 rounds of 3 minutes in 2012.

Table 1

Indicators of competitive activity boxers' qualifications at different periods of development of amateur boxing

№	indicators of competitive activity	periods of Boxing				
		(3 rounds of 3 minutes) 60 years	(3 rounds of 3 minutes) 90 years	(5 rounds of 2 minutes) 1997-1998	(4 rounds of 2 minutes) 1998-2000	(3 rounds of 3 minutes) 2012
		1	2	3	4	5
1	the total number of beats per bout (N)	122,1	167,7	221,5	224,5	174,17
2	the number of strokes per round	40,7	55,9	44,1	55,3	58,06
3	the number of beats in 1 minute	13,6	18,6	22,1	28,25	19,35
4	strikes, which have reached the goal (n) (in battle)	57,65	33,5	30,5	36,5	104,63
5	blows that did not reach the target (for a fight)	64,45	134,2	190,6	187,5	70,03
6	density technical actions	22,6	31,5	36,8	40,7	35,2
7	effectiveness ratio of strikes	0,47	0,21	0,14	0,16	1,75
8	reliability coefficient of protection	0,53	0,82	0,86	0,84	0,62

The first column of numbers in Table 1 shows the data obtained V. Petukhov [6], in the second, third, fourth – S. Shcherbakov [8]. Data obtained in the analysis of video fighting boxers in the Olympics in 2012 are presented in the fifth column of the table.

In the 60-80 years of the last century there was the classic formula of combat - 3raundy for 3min.

In 1997 it adopted a new formula of warfare - 5 rounds of 2 minutes, lasted until 1998. Since 1998, operated a different formula - 4 rounds of 2 minutes.

Since 2009, Bouts was 3 rounds of 3 minutes.

Improving skills of boxers, and with it the development trends of boxing, manifested primarily in the growth of density blows in battle in recent years.

Study of indicators of competitive activity boxers qualifications, who conducted the formula fights the battle (3 rounds of 3 minutes at 60 years, 3 rounds of 3 minutes at 90 years, 5 rounds of 2 minutes in 1997 and 4 rounds of 2 minutes in 1998 - 2000, 3 rounds of 3 minutes in 2012) revealed the following trends to change. Namely

1. Indicator "total number of beats for battle" (see Table 1) is 174.17% (column 5).

It has increased by 52.07% to indicators (see column 1), 6.47% (see column 2).

However, this figure has decreased by 47.33% (see column 3), at 50.33% (see column 4).

2. The indicator "number of strokes per round" (see Table 1) is 58.06% (column 5). It increased to 17.36% of the values (see column 1), 2.16% (see column 2) at 13.96% (see Column 3), 2.76% (see column 4).

3. The indicator "number of beats in 1 minute" (see Table 1) is 19.35% (column 5).

It has increased by 5.75% to performance (see column 1), 0.75% (see column 2).

However, this figure has decreased by 2.75% (see column 3), 8.9% (see column 4).

4. Indicator «have reached the goal" (see Table 1) is 104.63% (column 5).

It increased to 46.98% of the values (see column 1), in 71.13% (see column 2) at 74.13% (see Column 3), at 68.13% (see column 4).

5. Indicator «did not reach the goal" (see Table 1) is 70.03% (column 5).

It has increased by 5.58% (see column 1).

However, this figure has decreased by 64.17% of the values (see column 2), at 120.57% (see column 3), at 117.47% (see column 4).

6. Indicator "density technical activities" (see Table 1) is 35.2% (column 5).

It increased by 12.6% to indicators (see column 1), 3.7% (see column 2).

However, this figure decreased by 1.6% (see column 3), 5.5% (see column 4).

7. Indicator "efficiency factor strikes" (see Table 1) is 1.75% (column 5).

It has increased by 1.28% to performance (see column 1), 1.54% (see column 2), 1.61% (see column 3), 1.59% (see column 4).

8. Indicator "safety factor to protect" (see Table 1) is 0.62% (column 5).

It has increased by 0.09% (see column 1).

However, this figure has decreased by 0.20% from the values (see column 2), 0.24% (see column 3), 0.22% (see column 4).

According to S. Shcherbakov [8] a density battlefield since 1991, 1995 amounted to $P = 31\%$, and in 60 years it stood at $P = 22.6\%$. The increase of the density of the battle, he linked to the following reasons:

- Scientific and technical progress;
- With some changes in the training process, namely the preparation of boxers have been widely used methods of preparing some of the practices of foreign schools of boxing, including the training of professional boxers. We know that professional boxers are practicing a dense, hard, technical and tempo boxing;
- There are athletes in boxing with a new style of warfare, have a fight at all distances;
- Significantly increased the technical and tactical skills;
- There were some changes in the judging, in particular the fight to change the formula and methods of judging;
- Changed outfitting boxers.

Analysis of density index combat between 1997 and 2012 remained at the same level (within 35 - 40 units).

Conclusions.

As a result of the transition to the new formula of warfare has increased the density of the fight and a 3-fold increase in the indicator "number of strokes, which have reached the goal," namely, and increased "efficiency factor strikes", which leads to an increase in technical and tactical actions.

The density of the shock action is an individual characteristic, depends on its weight athlete and decreases with an increase of total body size (height and weight).

Density shock actions boxers depends on the skills of athletes and is the quantity that determines, ceteris paribus, the result of the battle. The density depends on the outcome of battle.

In connection with the transition to a new formula fight a density in 4-round bout compared with the 3-round rose 18.1%, the rate of effectiveness of shock action decreased by 0.31, the rate of effectiveness of protective actions has increased by 0.31. As a result of innovations in the rules of the competition, a boxing match was different higher density perform technical and tactical actions, greater intensity of hostilities attacking actions were carried out at a higher speed mode. According to the study of singularities of the boxers qualifications indicate differences in DEs (efficiency factor shocks).

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