
QUALITY MANAGEMENT IN VOLLEYBALL SECOND LINE ATTACK

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Abstract: The theme aims the progress of volleyball by aligning internal performance strategies to the modern game trends that are based on surprising the opponent. In the preparation part of volleyball along with the methodological orientation of content modeling it is required to implement in the collective structure the second line attack, the surprise element in the strategy to approach an official game. With this study we aim to make a critical analysis of the second line attack at the junior volleyball team at the University National Center from CSU Tîrgu-Mureş. The sample of subjects were 12, all female. The research took place from 15 September 2013 to 15 April 2014. The analysis of the second line attack was highlighting positive factors in relation to the field areas and direction of action. After implementing a model of training focused of the technical component of the second line attack and quantifying the performance indexes, significant differences were noted between the two trials (initial and final). Thus, we conclude that an effective quality management of volleyball can be approaching official games through a tactical system oriented on using the second line attack on both phases of the game.

Keywords: *volleyball, second line attack, management, tactical structure, efficiency.*

Introduction

The evolution of volleyball knows a great dynamic, both in terms of content and the spectacular development of the game but also in the area of distribution and popularity, a natural consequence of the policy FIVB has been practicing consistently in this direction [4].

In this performance context of volleyball we considered necessary continuous improvement and modernization, not by simple selections of knowledge, but by restructuring the entire performance system in relation to the appearance of the surprise element in the phase I of the game. This surprise element can only be, in our acceptance, the attack from the second line.

The constant progress of the volleyball game cannot be designed and built without a coordinated approach, integrative of all components of performance, starting from human resources (athletes, technicians), scientific components (research, methodology, medicine), technical-tactical and organizational framework (specialized units, competition systems, management) to the intimacies of the preparation process, training and game content - programming methods and tools, control, guidance, assessment, technical and tactical actions, patterns of play, etc. [6] quoted in [5].

Some specialized studies refer to the II line of attack as the most dangerous individual action for the opponent, along with the one executed from the first line [2]. It is the specific action that reflects through execution the cumulative effort of the team to create the attack and has to beat, in terms of theory and in order, blocking, self-doubling, doubling and receiving the attack [8].

There are studies that refer to a number of factors favoring the execution of the II line of attack. Being an action usually performed with high strength indexes, it has the main purpose to score the point or to reduce the possibilities for the opposing team to continue the game. In this line of thought, the II line of attack is based on the following factors [3]:

- Observation - sense of observation;
- Anticipation;

- Attention (flexibility, mobility, stability);
- Decision;
- Operational thinking (speed, flexibility, independence, decision);
- Intelligence
- Creative imagination

Effective management on how to drive the execution of the attack from the second line, involves the application of a specific management based on the actual implementation of an optimal speed and trajectory because a player surprised by an act of the game will react with delay and his entry into possession of the ball will be altered. Of course, the team cannot abuse such executions because it creates a habit that would eventually lead to an adverse effect [7].

In some specialized studies it was determined the duration (approximately) that frames a complete action from the first phase of the game. Thus, it lasts on an average 1.09 seconds, from the moment of the ball retrieval to the actual hitting of the ball (the second line of attack) to the opponent's field [1].

The same author, quoted in [8], makes the following statement: This action from the second line should be well concealed and triggered as late as possible to not allow the adversaries to anticipate and therefore intercept it with a suitable placement. The first condition would be (beside a great experience) knowledge of how the adversary reacts to the already taken and conducted action.

The theme aims the progress of volleyball by aligning internal performance strategies to the modern game trends that are based on surprising the opponent. In the preparation part of volleyball along with the methodological orientation of content modeling it is required to implement in the collective structure the second line attack, the surprise element in the strategy to approach an official game. With this study we aim to make a critical analysis of the second line attack at the junior volleyball team at the University National Center from CSU Tirgu-Mures.

Material and method:

Observation method was employed by recording efficiency parameters of the II line of attack. The research was conducted between September 15, 2013 and April 15, 2014 at junior by University National Center from CSU Tirgu Mures. The number of 12 subjects were female (Table 1).

The subjects

Table 1

| No. | Name and surname | Age (years) | Field position |
|-----|------------------|-------------|-----------------|
| 1. | L.T. | 17 | Setter |
| 2. | B.A. | 18 | Setter |
| 3. | T.S. | 16 | Player zone IV |
| 4. | D.L. | 15 | Player zone IV |
| 5. | R.R. | 17 | Player zone IV |
| 6. | M.L. | 18 | Player zone IV |
| 7. | I.R. | 17 | Player zone II |
| 8. | B.R. | 17 | Player zone II |
| 9. | M.A. | 16 | Player zone III |
| 10. | C.G. | 17 | Player zone III |
| 11. | P.B. | 18 | Player zone III |
| 12. | N.A. | 16 | Player zone III |

The training focused on the tactical component, proposed and implemented in the process of training at CSU volleyball team Tirgu Mures Medicine was developed based on the game setters's field position (Table 2).

| No. | Game situation | Tactical situation | Attack direction |
|-----|--------------------------------------|-------------------------------|------------------|
| 1. | Setter enters from Zone II (phase I) | Attack from zone VI on time 1 | Zone I or Zone V |
| 2. | Setter enters from Zone VI (phase I) | Attack from zone V on time 2 | Zone I |
| 3. | Setter enters from Zone V (phase I) | Attack from zone VI on time 2 | Zone V |

To calculate the coefficient of efficiency of the II line of attack we used the following formula [10]:

$$K = (X + 0,5Y) / (X + Y + Z)$$

where:

K - coefficient (index) efficiency;

X - action won (decisive);

Y - actions undecided (neutral);

Z - actions lost (wrong).

Results and discussions

The two tests, initial and final, were made at the end of Phase I and at the end of Phase III of the National Junior Championship of Romania and had the following results in relation to the game zones, direction and effectiveness of the attack from the second line (Table 3):

Results of the study

Table 3

| No. | Stage | Attack from 2 line | Attack decisive (from zone) | Direction (zone) | | Attack neutral/wrong | Efficiency (K) |
|-----|-----------------|--------------------|-----------------------------|------------------|----|----------------------|----------------|
| | | | | I | V | | |
| 1. | Initial Testing | 152 | VI – 17 | 7 | 10 | 23/48 | 0,608 |
| | | | I – 29 | 22 | 7 | | |
| | | | V – 35 | 21 | 14 | | |
| 2. | Final Testing | 178 | VI – 24 | 12 | 12 | 23/39 | 0,716 |
| | | | I – 44 | 24 | 20 | | |
| | | | V – 48 | 32 | 16 | | |

Interpretation of results was done using the graphic method and tracked the following parameters:

A. The efficiency of the second line attack in relation to the execution area (Figure 1):

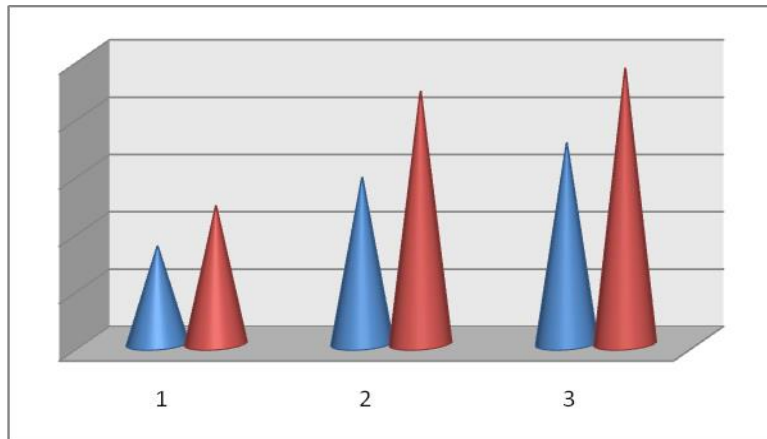


Fig.1 Execution areas of the second line attack

Legend:

- 1 – the attack executed from VI zone
- 2 – the attack executed from I zone
- 3 – the attack executed from V zone
- * – Initial Testing
- * – Final Testing

B. The efficiency of the second line attack in relation to the ratio of attacks considered to be neutral and attacks considered wrong (Figure 2):

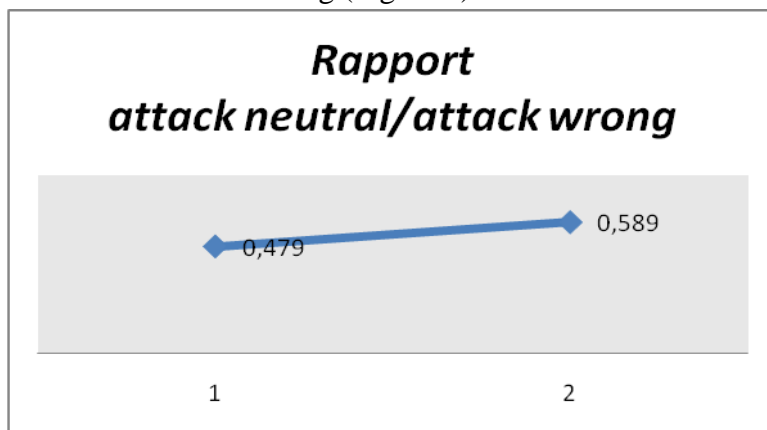


Fig.2 Attack efficiency netrual/wrong

Legend:

- 1 – Initial Testing
- 2 – Final Testing

C. General efficiency of the second line attack (Figure no. 3):

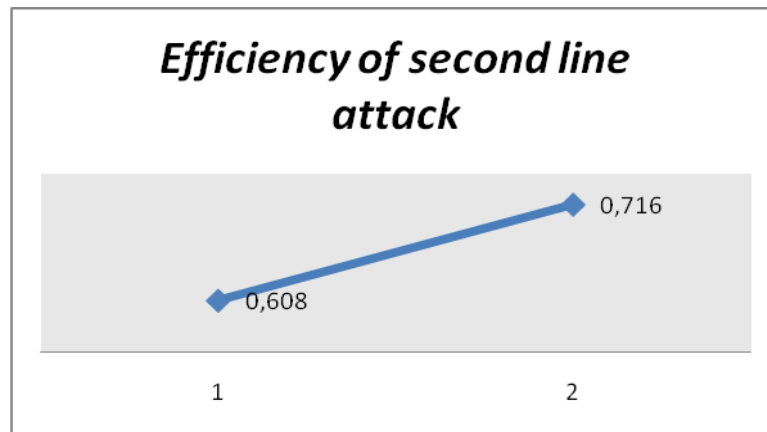


Fig.3 General efficiency of the second line attack

Legend:

1 – Initial Testing

2 – Final Testing

Conclusions and recommendations

Analyzing Table 3 we can emit the following conclusions:

- The percentage of second line attacks executed from Zone V is seconded to the same procedure performed from Zone VI and is equal to the one executed from Zone I. This information is doubled from studying Figure 1

- Final test results are superior to those recorded after initial testing

- A different conclusion emerges by studying Figure 2, namely that the neutral/wrong attack report increased after final testing because of the results achieved after implementing the training model developed on the tactical component.

- Also, by study of the Figure 3 we can see an increase in the overall efficiency of the second line attack recorded after final testing, conducted at the end of the competitive season.

These conclusions drawn from the analysis of this material may be transformed into the following proposals:

- Diversification in building the attack by using the second line attack, on both phases of the game and in all areas (zone I, zone VI, zone V)

- Using the second line attack depending on opposing players and the quality of receiving the serve or attack coming from the adversary

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Acknowledgements

Acknowledgements Professor Mircea Neamtu PhD and Professor Alexandru Pacuraru PhD. This Paper is supported by the Sectorial Operational Programme Human Resources Development (SOP HRD), ID134378 financed from the European Social Fund and by the Romanian Government.