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"North Ossetian State Medical Academy"
Ministry of Health of the Russian Federation**

**DEPARTMENT OF GENERAL HYGIENE
AND PHYSICAL CULTURE**

Badminton in the system of physical education at the university

Educational-methodical manual on the organization
of independent work and study of the disciplines
"Physical culture and sports" and "Elective course in physical
culture and sports" the main professional educational program
of higher education – specialty program in the specialty
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The training manual contains practical materials and recommendations for organizing and conducting training sessions, reveals the main aspects of the content of the badminton game. The introduction of badminton as a type of physical activity in the educational and training process is a good addition to the student's motor mode. Players who do not have health problems can significantly increase their physical condition in extra-time classes, and students of a special medical group have the opportunity to improve their health through badminton during the lesson session.

The materials presented in the educational and methodological manual for students "Badminton in the system of physical education at the university" meet the requirements of the educational standard for students of medical universities.

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1. INTRODUCTION

The general goal of physical education is to create sustainable motives and needs for students to take care of their health, holistic development of physical and mental qualities through badminton, creative use of physical culture in organizing a healthy lifestyle.

The badminton course focuses on:

- ✓ developing physical qualities and abilities, improving the functional capabilities of the body, strengthening individual health in badminton classes;
- ✓ education of care towards one's own health, needs in physical education, recreation and sports and recreation activities in badminton classes;
- ✓ mastering the technologies of modern health systems of physical education, enriching individual experience with specially applied physical exercises and, in particular, badminton;
- ✓ mastering the knowledge of physical education, their role and importance in the formation of healthy lifestyles and social orientations in badminton classes;
- ✓ acquisition of competence in physical education, recreation and sports activities, mastering the skills of creative cooperation in collective forms of physical exercises through badminton.

The badminton course is designed to provide the necessary level of knowledge on the methodology of this sport, as well as to develop the qualities and skills necessary for the student in his future professional activity (speed of reaction, concentration of attention, endurance).

2. BADMINTON – HISTORICAL DEVELOPMENT

The game of ball with feathers has been known for a long time. In India, cave drawings were found depicting scenes of the game, similar to modern badminton. The age of these drawings is about 2000 years.

According to some sources, even the Incas were fond of a game very similar to badminton. In Europe, during feudalism, representatives of the nobility played a similar game.

Common to all listed cases is that the game of ball with feathers was an entertaining game. This game was brought from India to England, and in 1872, the first demonstrations were held in the small resort town of Badminton.

Soon, the town of Badminton became known throughout the world. Badminton was officially called a new sport. In 1934, the International Badminton Federation (IBF) was created in London, whose members are currently more than 50 countries.

After the creation of the IBF, badminton developed into an independent sport, in which competitions are regularly held both at the national and international levels.

Since 1948–49. Thomas Cup draws for men and from 1956–57 – Uber Cup for women. These are the most honorable team trophies in badminton. The draws of these cups, as well as the world championships held since 1977, are organized for singles and for couples every three years. In addition, since 1967 there has been the European Badminton Federation (EBF), which since 1968 every 2 years holds the European Badminton Championships.

3. BADMINTON – RULES OF THE GAME

Before the start of the competition, participants throw lots. The winner has the right: to serve first, first to accept the serve, to choose the side of the site.

The men's singles meeting and all doubles meetings are held up to 15 points, the women's singles meeting continues to 11 points. After one of the partners scored a given number of points, the game ends.

The game consists of two games. Points are counted to the giving partner only if the opponent makes a mistake. An error committed by a serving player leads to a loss of serve.

In single meetings with zero and even points, the filing is performed only on the right, and with odd points – only on the left. In paired meetings feeding is performed alternately from the right and left fields of the platform side. Partners serve in turn.

If partner A made a submission on one side, and partner A or B on the other side could not accept the submission, then partner B of the first side receives the right to submit. The partners of the first party retain the right to file until they themselves make a mistake. In this case, the right of submission passes to the other side. In doubles, the player standing on the right half of his platform is the first to serve.

In games up to 15 points with a score of 13:13 or 14:14, the side that first scored a given number of points can choose to continue the game by another 5 or 3 points. In this case, the party that first scored 17 or 18 points is the winner of the game.

In women's single meetings, the same rule is used with a score of 9:9 or 10:10. In this case, the batch is held up to 12 points.

During feeding, the wave must be guided diagonally and lowered within the boundaries of the corresponding enemy feed field. At the time of impact, the racket should not rise above the level of the belt, and the head of the racket should not rise above the hand holding the racket.

The feed and receiving feed must be within their diagonal feed fields. When feeding, do not tear your legs off the surface of the platform.

If during the game the wave touches the net and flies to the opponent's side, the blow is considered correct. If a wave falls outside the site, does not fly over the grid, touches the floor, ceiling, walls, players, etc., then this is considered a mistake. In single meetings, one player cannot serve twice in a row without winning a point. Before and during the pitch, it is impossible to deliberately distract the opponent's attention or interfere with him.

4. GAME FEATURES

Badminton refers to acyclic difficult – coordination sports. It has the following features:

- ✓ speed of movement;
- ✓ speed of technical techniques execution with maximum
- ✓ reduction of preparatory actions;
- ✓ speed of thinking;
- ✓ increasing the number of risky blows.

The athlete's participation in the competition is usually associated with a large energy consumption and intensive work of the cardiovascular and respiratory systems. This is evidenced by an increase in heart rate to 160–180 beats per minute. During the game, oxygen hunger and oxygen demand increase significantly, requiring anaerobic endurance. It has been established that badminton classes have a positive effect on all systems of the body, especially on cardiorespiratory. The game at a fast pace poses a number of requirements without which success in modern badminton is impossible:

- ✓ ability to switch to different operation modes in a timely manner,
- ✓ ability to show the best of their qualities in intense game situations, etc.

5. PHYSICAL FITNESS FEATURES BADMINTON STUDENTS

The game at a fast pace poses a number of other requirements, without which success in modern badminton is impossible: the ability to switch to various modes of operation in a timely manner; ability to show the best of their qualities in intense game situations, etc. All these circumstances determine the structure of the physical qualities required by the badminton player. Of the physical qualities that play a decisive role in badminton, endurance, flexibility, speed in all its manifestations, jumping should be distinguished.

Given the above information about badminton, it can be understood that the game poses rather high requirements for physical training and almost all the physical qualities of the athlete are necessary for a full-fledged educational and training process. Although this manual is intended for students who have not previously studied badminton and in the course of their studies they will have to face the basics of the game, which at the initial stage of study do not require in-depth physical training, the development of basic physical qualities is necessary even in this period of badminton training. Let us dwell on the physical qualities necessary for the badminton player in more detail.

Endurance is necessary in any sport, including badminton. Endurance is the ability to perform work of a given intensity for a long time. Since the duration of work is limited, ultimately, by the coming fatigue, endurance can be described as the ability of the body to resist fatigue.

The duration of maintaining performance during physical exercise is determined by:

- ✓ high level of sports-technical preparation;
- ✓ the ability of the nerve cells of the body to maintain a certain excitation for a long time;
- ✓ high working capacity of circulatory and respiratory organs;
- ✓ availability of large energy resources in the body;
- ✓ high coherence of physiological functions;
- ✓ ability to combat subjective feelings of fatigue with the help of strong-willed efforts.

Common and special endurance are distinguished.

General endurance – the ability of the athlete's body to perform work for a long time, involving many muscle groups and making quite high requirements for his cardiovascular, respiratory and central nervous systems, as well as positively affecting his sports specialization.

Special endurance is due to the peculiarities of the requirements for the athlete's body when performing exercises of a selected sport.

The nature of the badmintonist's actions is associated with both aerobic (general) and anaerobic (special) endurance. In almost every game, the athlete's body has to withstand heavy loads during long rallies of the wave, accompanied by rapid movements along the site and sharp changes in speed and direction of movement. However, given the specifics of the initial training period for badminton players, more attention should be paid to the development of general endurance, which, being the basis for raising special endurance, contributes to increasing the aerobic and anaerobic capabilities of the athlete's body. And another important factor is the long loads, through which general endurance is brought up and a great psychological impact is exerted on the will qualities of the student-administrator.

As means for the development of endurance, the following are used: long, uniform, moderate–intensity cross–country running (with P up to 160 ud.min.), swimming, etc. Jumping through a racecourse gives a very positive result. Jumping with a racecourse perfectly develops endurance! The higher the jump rate, the more useful it is for the development of high–speed endurance of athletes.

The importance of developing the physical quality required by the badminton player, such as flexibility, is undeniable. The level of flexibility depends largely on the following:

- ✓ high level of sports and technical preparation;
- ✓ joint structure;
- ✓ elasticity of muscles, ligaments, joint bags;
- ✓ initial position of the body and its parts;
- ✓ preliminary muscle stress;
- ✓ rhythm of movements;
- ✓ degree of activity of stretched muscles;
- ✓ age;
- ✓ quality of warm–up;
- ✓ level of power preparation.

Factors such as the temperature of the environment and body, the mental state of the student are also taken into account.

Flexibility is measured by maximum motion amplitude. In scientific research, it is usually expressed in angular degrees, in practice they use linear measures.

The most important signs for determining the level of development of flexibility are the mode of operation of muscle fibers and the presence or absence of external assistance in performing exercises.

Based on these features, dynamic flexibility manifested in motion is distinguished; static–while saving the pose; active – due to his own muscle efforts and passive – due to external assistance.

Analyzing the specifics of the performance of beats in badminton, the nature of movements around the site and taking into account the above presented qualification of flexibility, we note that it is advisable for badminton players to educate active dynamic flexibility. Most clearly, the appropriateness of educating the flexibility of joints and muscle fibers shows the consideration of the game moment when reflecting a blow to a wave flying to the left side of the platform. It should also be noted all kinds of forward falls, the performance of which requires a sufficient development of flexibility of the hip joints and leg muscles. Despite the fact that the junior school age is especially favorable for the development of flexibility, it can be improved in a more mature age – student age.

Tensile exercises performed with a marginal amplitude, which should be preceded by preheating, should be used as a means of building flexibility. The best result is given by stretching exercises performed in series of 10 –12 repetitions in each. They should be performed daily and several times a day.

One of the important physical qualities when taking badminton is speed.

Speed, as the physical quality of an athlete, determines his ability to perform motor actions in the minimum length of time for these conditions. In the variety of actions included in the activity of the badmintonist, the speed of motor acts is a significant place.

The complex manifestation of speed during the badminton player match depends on the latent time of the motor reaction, the rate of single muscle contraction, provided that you overcome your own body weight and the maximum possible frequency of movement.

It is possible to educate such physical quality as speed with the help of certain tools and methods of training, which purposefully affect the improvement of the above three elementary forms of it.

The maximum speed of movement of the badmintonist largely depends, obviously, on muscle strength and anaerobic endurance. It also depends on the degree of mobility in the joints and the ability of the muscles to quickly transition from a tense to a relaxed state.

And although we consider the system of training badminton students, it should be borne in mind that the education of speed at this stage of training is a certain basic basis on which this quality will be further improved. Hence, the manifestation of overall speed in the badmintonist can be expressed in the following form:

- ✓ instantaneous reaction to a moving wave;
- ✓ understanding the significance of the enemys plan;
- ✓ correct initial position, which allows to perform the starting acceleration effectively to the place of the wave landing;
- ✓ retaliatory action, putting the opponent in a difficult game situation.

The technique of raising speed abilities is, first of all, the performance of a well-mastered task at limit speeds, which allows you to focus all efforts on speed, and not on the way to perform exercises. Speed exercises must be stopped at the first signs of fatigue. The following exercises are recommended as tools for developing speed qualities:

- ✓ running from the start of 30–60 m, special jumping exercises;
- ✓ running at a rate of 20–30 m;
- ✓ throwing a tennis ball and catching it with one hand;
- ✓ improvement of "laughter" in a pair (maximum pace).

Lets move on to consider such a quality as muscle strength in student administrators. During the game, almost all the main muscles of the athlete's body function, performing dynamic work, and a large group of leg muscles perform combined static–dynamic work.

When playing badminton, the main task is to achieve a certain speed of movement along the site when overcoming the gravity of the athlete's own weight in order to best perform the planned maneuver with a wave. Therefore, for badminton players, an increase in the level of development of relative strength of leg muscles plays a primary role.

Therefore, in the process of power preparation, it is necessary:

- ✓ to ensure the general harmonious development of the strength of all major muscle groups of the body;
- ✓ develop explosive force, that is, the ability to rapidly develop maximum effort;
- ✓ to nurture dynamic (fast) strength and strength endurance of leg muscle

An effective result in this direction is achieved by the following exercises:

- ✓ bar exercises, development of "explosive" force and force endurance: 30 –50% of the maximum; Exercises are performed at a high rate of repetition 12 –30.
- ✓ gymnastics on shells;
- ✓ sprint run 10x40 m;
- ✓ Special weighing jumping and running exercises;
- ✓ jumping with a racecar;
- ✓ jumping over the barrier.

Within the framework of the development of high–speed power qualities of students – administrators, the relevance of the development of such physical quality as jumping, which is one of the important qualitative aspects of motor activity, is noted. It is generally accepted that physical quality jumping is quite multifaceted, integrating other physical and coordination qualities, the manifestation of which is interconnected and interconnected.

Important components of jumping are the strength and speed of muscle contractions. As is known, the jump movement has a damping phase and an active repulsion phase. During depreciation, the center of gravity goes down – to the support, the work of the muscles becomes inferior. At the moment of active repulsion, the general center of gravity of the body is removed from the support and the character of the muscles changes from inferior to overcoming. At the same time, not only the rational ratio of force and speed of movements becomes crucial, but also the determination of the exact moment of their combination both in preparatory actions and in the leading link of technology. Thus, the next important component of jumping is the rhythm of movements. And the structure of jumping is composed of three main components: explosive force, speed and rhythm of movements.

The development of jumping is determined by many factors.

These include:

- ✓ level of intermuscular and intramuscular coordination;
- ✓ high lability of nerve centers;
- ✓ peculiarity of morphofunctional state of articular–ligamentous and muscular devices;
- ✓ neuropsychiatric and emotional state;
- ✓ Degree of physical and coordination qualities.

Mentioning above the speed and rhythm of movements, let us dwell in detail on the explosive force of the leg muscles, which is decisive for the manifestation of jumping and is extremely necessary when playing badminton.

The amount of effort developed in the shortest possible time when performing a jump push should be extremely large. This is possible only with the explosive nature of the strength of the leg muscles. The relationship of speed and muscle strength manifests itself in the power of motion. For a short and strong repulsion characteristic of badminton, it is necessary to show instantaneous contractility of the muscles with their strong stress, which requires a powerful concentration of will efforts. Therefore, explosive force is the ability of athletes to exhibit its greatest value in the least time. Summarizing the above, it can be concluded that jumping is the ability to maximize the concentration of muscle and will forces in a minimum period of time when overcoming vertical or horizontal distances.

In badminton, as in all sports games, we meet with simple and complex motor reactions. By simple reaction is meant the response time of a pre-known movement to a pre-known signal when it appears unexpectedly. The initial period of training of badminton students implies that attention must be paid to the development of such physical quality as the speed of reaction. After all, improving the simple reaction of a badmintonist is the basis for improving its complex reaction, that is, the response time of a previously known movement to an unexpected signal (in this case, a wave moving at an unknown pre-determined speed in an unknown pre-determined direction).

Playing badminton, like any game, requires the athlete to coordinate movements and dexterity well. In coaching practice, there are frequent cases when it was the ability to navigate a specific game situation and correctly coordinated movements that helped the badminton player repel a seemingly almost lost wave. Thus, the development of coordination abilities is one of the fundamental physical qualities necessary for students – administrators not only at the stage of initial training, but also throughout the entire period of sports improvement.

6. TECHNICAL TRAINING FEATURES BADMINTON STUDENTS

Given the fact that students who decided to master the skills of playing badminton did not engage in them earlier, it is necessary to start teaching the badminton technique almost from scratch. So, from the point of view of mastering the technical elements of badminton, the initial training of student administrators should be devoted to the following:

- ✓ formation of correct execution of game stands during execution and reception of the feed;
- ✓ execution of all types of feeds;
- ✓ execution of main strikes;
- ✓ development of site movements.

Having studied and sufficiently mastered the main elements of badminton technology, it is necessary to begin to put into practice various exercises with a wave aimed at "honed" the main blows and technical "bundles."

As mentioned above, this manual is designed for students who did not engage in early badminton. Therefore, we will consider the basic elements of the badminton technique in more detail.

a. Game racks.

There are three types of game racks – high, medium and low. A high gaming rack (often called the main rack) is most often used during the game. At the same time, the badmintonist's legs are slightly bent, the shoulders are parallel to the net, the torso is slightly inclined forward. Before reaching the impact, the projection of the center of gravity of the body is transferred to the front of the feet of both legs – it is easier and faster to start moving. Preparing to repel the attacking blow of the opponent, many players occupy a middle (protective) stand, in which the athlete's legs are bent in the knees somewhat more than with a high stand, body severity falls on the whole foot or its front part. The low stand, which is usually resorted to in a pair game, is performed almost in a semi-medium, which allows you to more actively reflect the waves flying over the net at a low height. When making the submission, the student occupies the middle rack.

Speaking about further technical elements of the badminton game, one cannot but touch on the issue of the grip of the racket by novice badminton students. After all, the accuracy and strength of the strike depend on how the player holds the racket. For a successful game of modern badminton, a universal racket grip is used: the player takes the racket with his left hand by the rod so that the rim is perpendicular to the floor. The right hand with an open palm is

superimposed on the strings of the racket and moves along the rod and handle of the racket until the edge of the palm abuts against the thickening on the end of the handle. Then the handle is tightly wrapped with all fingers of the hand. The grip when performing beats is characterized by a different tone of the hand muscles in different phases. In the preparatory and post-impact phase, the brush should be relatively relaxed. During the impact phase itself, the handle must be held tighter to provide the desired impact force and avoid slipping the racket out of the hand. Adherence to this principle ensures optimal performance of the muscles of the hand throughout the game. Badminton students should remember that the entrenched wrong grip of the racket is poorly corrected in the process of further improving playing skills.

b. Types of feeds.

Различают четыре вида подач:

- ✓ high serve;
- ✓ short or low (low or shortserve);
- ✓ flat (driveserve);
- ✓ high attacking (highflickserve).

Each wave draw begins with a pitch. And it should be considered not just as a means of introducing a wave into the game, but as an essential tactical element. Therefore, a honed supply technique is required. Most often, when serving, the right leg (when the student holds a racket in his right hand) is somewhat behind, at a distance of a middle pitch. The hand with the wave must be arranged so that both the wave and the enemy and his field are visible. The position of the center of gravity of the feeder is significant. With a high feed, after a wide swing with the hand and intense final movement with the brush, it is better to transfer the center of gravity to the right leg dragged back, then the left leg will help keep from moving forward by inertia. With a short feed, it is desirable that the racket moves in a plane closer to horizontal than vertical. When performing a flat feed, it is advisable to lift the socks and at the final moment make a sharp brush movement.

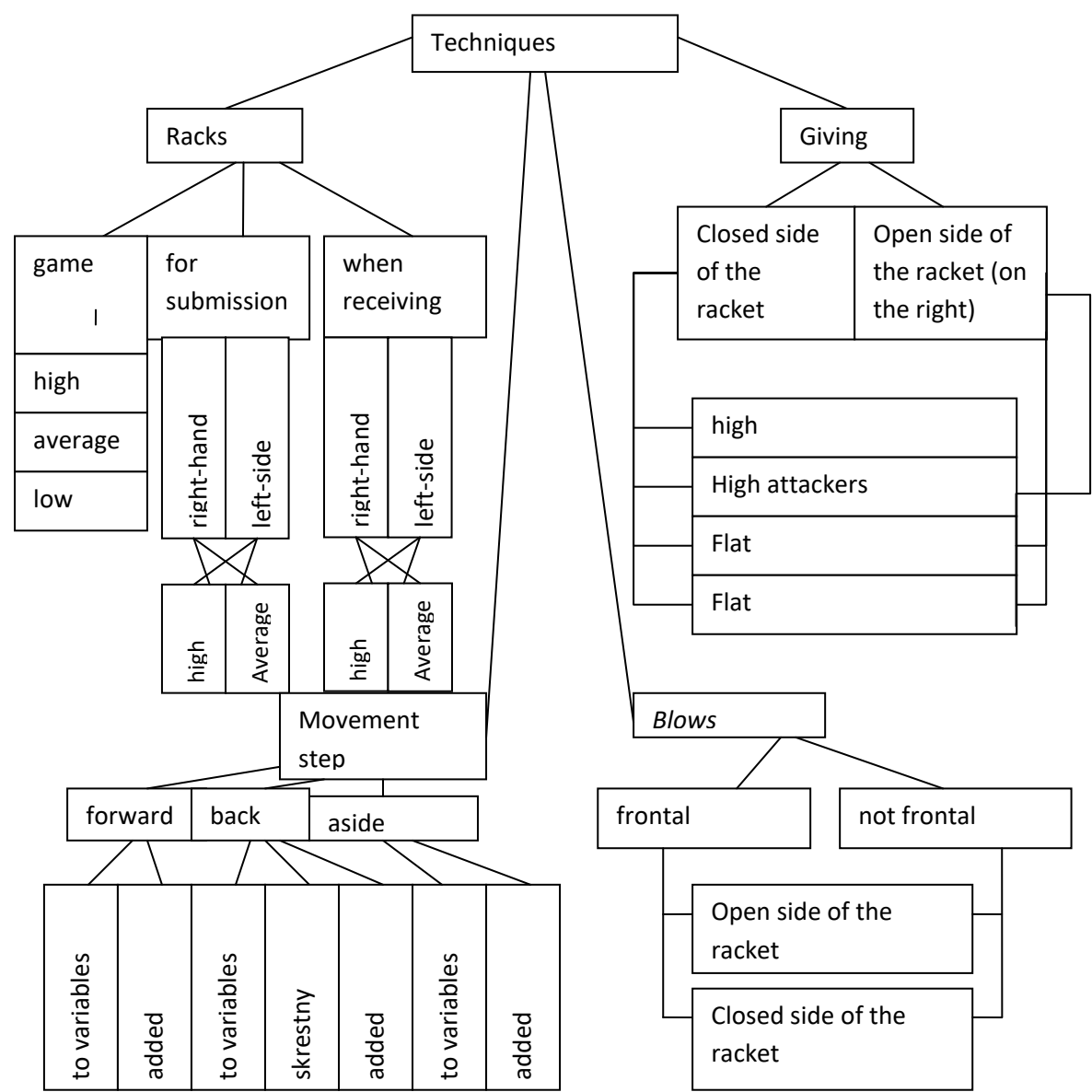
c. Beats in badminton.

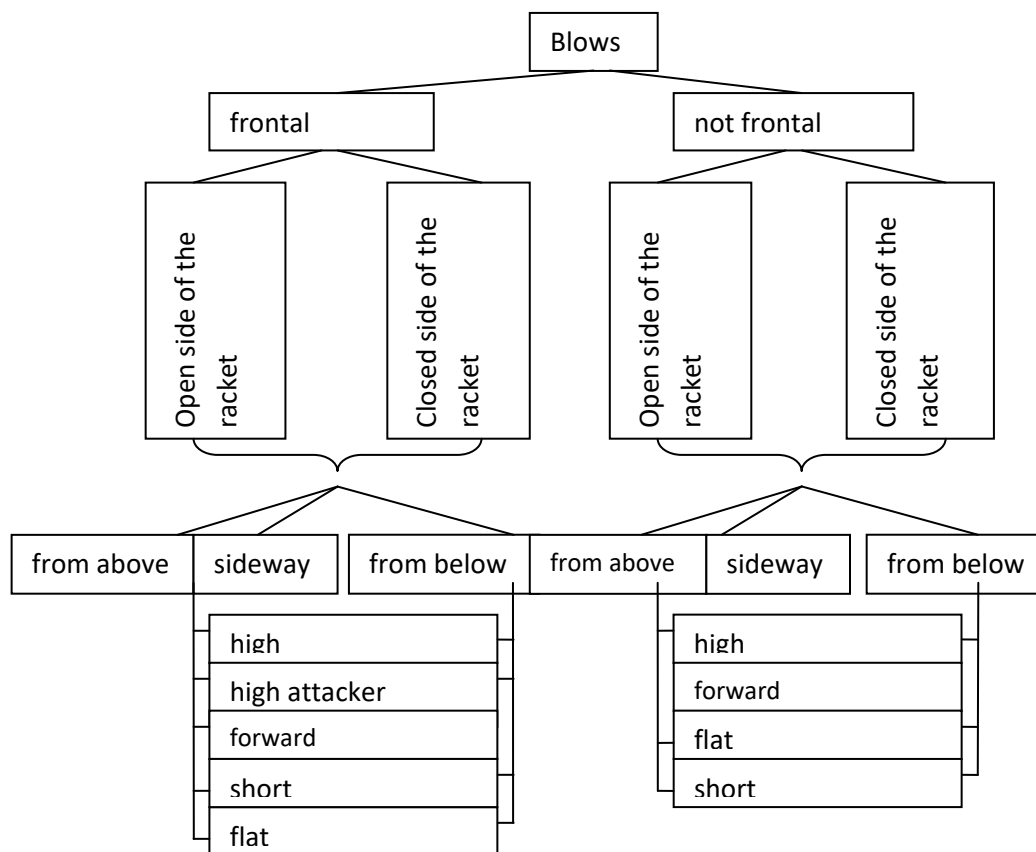
In badminton, it is customary to classify beats in accordance with their features according to several features:

- ✓ on the side of the racket with which the wave is met;
- ✓ at the place of impact in relation to the student's torso, that significantly influences the technique of impact movement;
- ✓ by the nature of the wave flight path, which is largely determined by the final movement of the brush before the wave leaves the string surface.

These positions are reflected in the table below.

Classification of beats in badminton





And now we will consider the classification of beats in badminton in more detail. First type of classification:

- ✓ on the side of the racket that meets the wave

The impact can be made by the open side of the racket (forehead), that is, the side of the racket that is on the palm side and the closed side (backhand, literally – the "rear side of the hand"). For brevity, these blows are called right and left blows.

Second type of classification:

- ✓ at the place of impact in relation to the athlete's torso.

At this stage, the classification of impact movements should be note three types of impacts: top, side and bottom. Here, the position of the links of the hitting hand in the main phase of movement is decisive.

Finally, the third type of classification:

- ✓ by the nature of the wave flight path.

In turn, this type of classification distinguishes between five main trajectories along which a wave can be sent, which allows all impacts to also be divided into five groups:

- ✓ high, after which the wave flies along an upward trajectory and drops behind the player receiving it from above;
- ✓ high attackers, after which the wave flies over the receiving player at a minimum height inaccessible for reflection, and drops behind him from above;

- ✓ short, after which the wave flies into the grid area of the receiving player;
- ✓ flat, after which the wave flies some part of the path parallel to the plane of the site; the flat impact path passes almost above the grid;
- ✓ attacking strikes, after which the wave flies along a downward trajectory, at high speed; with a striker strike, or "laugh," the wave, practically not planning, literally crashes into the floor.

It should be noted that the above-mentioned gradation of impacts concerns only extreme, characteristic cases. In addition to them, intermediate techniques are also used, for example, a blow to a wave flying on the right slightly above the head is intermediate between strikes from above and from the side.

Despite the fact that the blow is performed merged, when considering the technique, it will be convenient for a badminton student to break it into three phases – preparatory, main and final.

The preparatory phase includes movement to the initial position for impact in locks with torso turning and hand retraction.

The main phase is the main one in the shock movement and lasts from the beginning of the movement towards the wave until its separation from the string surface.

Finally, the final phase is the free completion of the strike and quick preparation for subsequent actions.

Such separation into phases is applicable for all strikes on the wave, which provides significant assistance in teaching the main blows of student administrators.

d. Moves around the site.

Transportation training can be divided into five stages:

- ✓ study and fixing of the technology of movement;
- ✓ increased speed of movement;
- ✓ bringing the acquired skills to automatism;
- ✓ developing the ability to predict the direction of the opponent's response and move to the place of impact at the shortest distance;
- ✓ improvement of movement in the gaming environment.

Given that we are dealing with novice administrative students, special attention should be paid to the first three stages of training and improving the technique of moving around the site.

Players can move around the site with variable, set, and cross steps, make short runs, lunges, sometimes even jumps. Badminton is such a diverse game and the individual characteristics of students – players are so different that there is no definite recommendation of any uniform way of moving around the site.

So, we briefly considered the initial period of training students who want to engage in badminton, in terms of mastering them the main elements of the game technique.

7. FUNDAMENTALS OF TECHNOLOGY

7.1. Racket holding method (grip)

The racket when playing badminton can be kept in different ways, adapting the grip to various blows. However, during initial training, it is advisable to keep it in a universal way. Universal method of racquet holding consists in the following:

- a) the player takes the racket with his left (left – right) hand and holds it so that the plane of the rim is perpendicular to the floor;
- b) the playing hand puts on the strings of the racket and guides with his hand along the strings, then along the rod until the rib of the palm abuts against the thickened end of the handle;
- c) keep the racket as if it is the hand of a person greeting you. At this moment, the racket handle lies across the base of the three fingers, and the thumb and little finger serve to control the racket. From this basic universal grip with the help of fingers, the racket can be intercepted into another grip to perform strikes, both open and closed side of the racket. Remember that the racket must be held easily without clutching your fingers.

7.2. Terminology

For the convenience of explaining and perceiving certain details of the athletes technique and actions, badminton has its own terminology. The terminology system of badminton is constantly being improved and updated, reflecting the changes taking place in it.

When classifying game actions, the concepts of areas and halves of the site, levels of the height of the wave at the time of impact and flight paths of the wave are used (Figure 1).

Half site area

Front zone – space between grid plane and plane running parallel to grid through front feed line.

Middle zone – space between planes parallel to grid passing through front and rear feed lines.

Rear zone – space between planes parallel to grid passing through rear feed line and back line of platform.

Half (left, right) – the space between planes perpendicular to the grid planes passing through the left

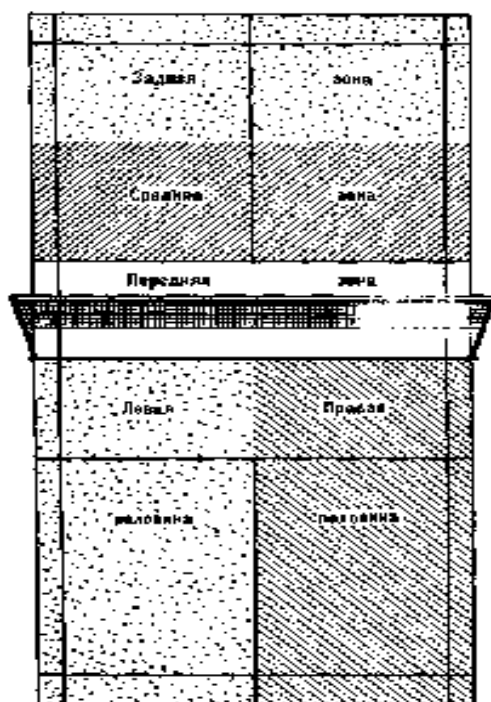


Fig. 1 Site areas (right) side and center lines.

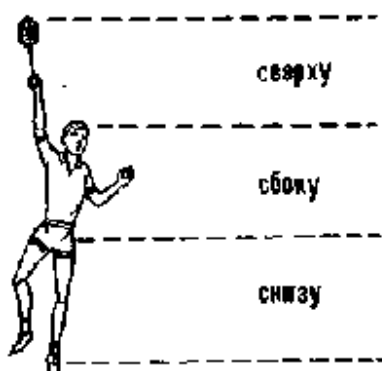


Fig. 2 Height levels at impact

Blows

Strokes from above include strokes during which the hand of the hitting hand is directed upwards at the vertical position of the forearm or positions close to it. With side impacts (at the middle level), the brush is directed to the side, and the forearm occupies a position close to horizontal. When striking from below, the brush in the main phase is directed downward.

Wave flight path

High – ascending trajectory with completion in the rear area of the site.

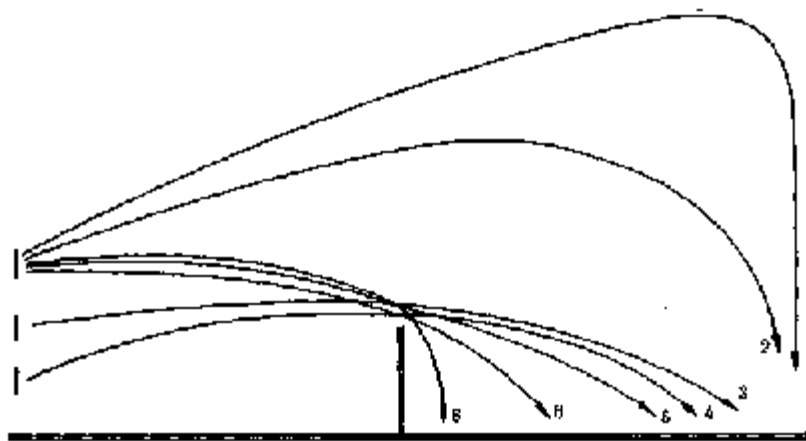
High attacking – the wave flies at a minimum height over the receiving player and drops in the rear area of the platform.

Flat – the wave flies over the grid and drops into the back zone of the site.

Descending – path along which the wave flies from top to bottom, flying directly above the grid, and drops into the middle or rear zone of the platform.

Semi-flat – trajectory, along which the wave flies some part of the path parallel to the plane of the site, flying directly above the grid, and drops into the middle zone of the site.

Short – path along which the wave flies into the front zone of the receiving player.



1 – high; 2 – high attacking; 3 – flat; 4 – semi-flat;
5 – descending; 6 – short

Fig. 3 Trajectories in badminton.

Blows from the front zone

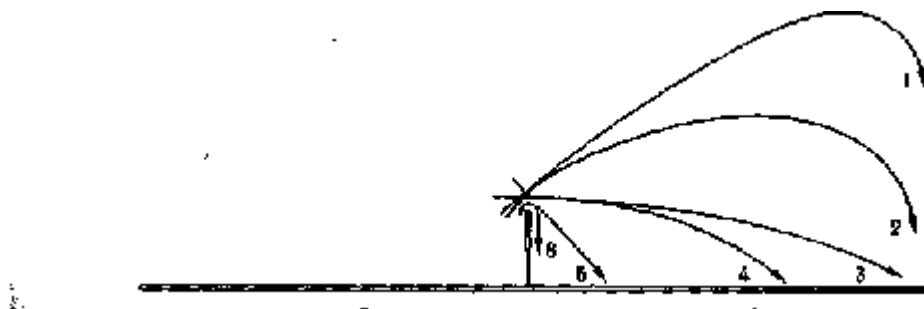
Relief – impact of the open and closed side of the racket on the wave located at the level of the grid edge and below, which then flies along a high trajectory.

Attacking flip – impact of the open and closed side of the racket on the wave located at the level of the grid edge and below which it then flies along a high trajectory.

Finishing – an attacking strike performed by the open and closed side of the racket on a wave above the level of the edge of the net, which then flies along a descending trajectory.

Push – impact performed by open and closed side of racket on wave located at the level of grid edge by translational movement of racket in direction of wave flight.

In addition, there are also blows from the front zone: sweep, stand, clipping, twisting, translation – oblique along the grid (Figure 4).



1 – folding; 2 – attacking flip; 3 – 4 – finishing; 5 – push; 6 – sweep, support, clipping

Fig. 4 Trajectories of impacts from the front zone

Impacts from the middle and rear area of the site

High – the wave flies along the ascending trajectory and descends behind the receiving one. It is often used to buy time in a difficult situation and have time to take a convenient position in the center of the field.

High attacker – the wave flies over the receiving player at a minimum height, inaccessible for reflection and descends behind it. Such a blow is used when preparing an attack. Often performed with a pause during a swing and is one of the most effective blows in badminton, if you need to force the opponent to move to the back line.

Flat – the wave flies some part of the path parallel to the plane, usually almost above the grid, and then, gradually declining, falls in the back zone of the platform. It is often used in pair games as a preparatory blow during the transition from defense to attack, as well as in order to force the enemy to move from the central position to the side.

Forward – smash – the wave flies along the downward trajectory at high speed. This impact has two varieties: smash-impact of a certain force and speed and semismash-impact with an average flight speed and force. In flight length, when the wave falls closer to the front zone, it is called short and, when the wave falls at the back of the platform, long. This strike is performed in the final stage of attacking actions, and, as a rule, this strike ends the tactical combination of other strikes.

Short – the volan flies into the net zone of the receiving player. There are two types of such blows: short – close, performed gently with a passive brush movement, as a rule, cutting the wave from the side. At the same time, the wave drops slightly further from the grid, but reaches the target much faster. These blows make the opponent move to the grid and make mistakes in the front area of the platform. In addition, they suppress the active actions of the enemy, force him to play from below and use ineffective retaliatory attacks.

Cut – attacking impact from above into the front area of the platform. The impact is made on the side of the head of the wave from the outer or inner side.

Blocking – the response to a fast-flying wave, as a rule, smash, is performed as a stand. The wave is directed to the front zone of the platform on the grid or as a strong blow, the wave is directed to the middle and rear zone of the platform (Figure 5).

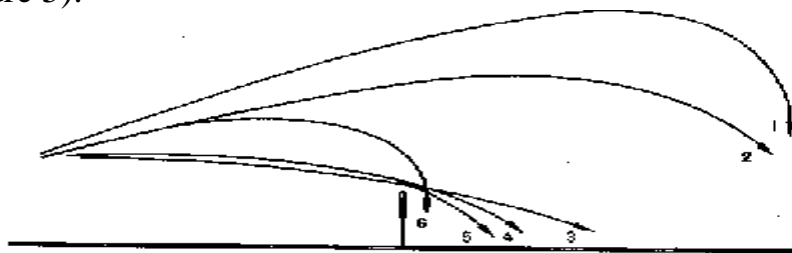


Fig. 5 Wave flight path at hits from above from the middle and rear zone

1 – high; 2 – high attacking; 3 – flat; 4 – attacker; 5 – short fast; 6 – short close.

Giving:

High – the wave flies from below along the upward trajectory to the back line of the platform.

High attacking – the wave flies from below along a high attacking trajectory into the rear zone of the platform.

Flat – wave flies along flat trajectory into middle and rear unprotected zone of platform.

Short – the wave flies along a low trajectory to the front feed line.

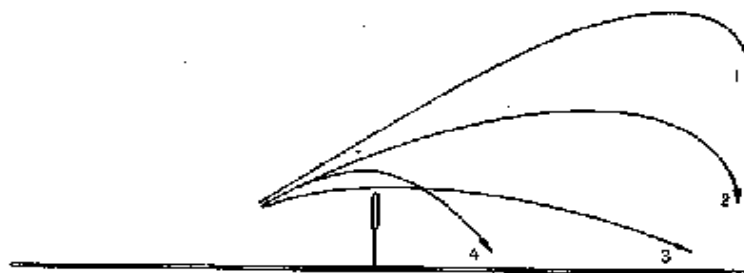


Fig. 6 Feed Paths

1 – high; 2 – high attacking; 3 – flat; 4 – short

In addition, additional concepts are used in badminton practice. Non-frontal blows, frontal blows, blows of the open and closed side of the racket (on the right and left in relation to the vertical axis of the body), gently and rigidly performed blows.

Giving

According to the rules, you can only serve with a blow from below, without tearing your legs off the floor. You can't serve in motion. Feeding is also

considered to be an error if at the time of impact the wave was above the belt or at the time of impact some part of the racket head was above the hand holding it. An error is considered if at the time of supply the feeder was outside the supply area or was on the line. Now about the feeding technique.

High supply

During the filing, look at the wave. Hold the brush with the racket raised before serving. Perform the feed calmly, cold-blooded. The legs are in constant contact with the floor from the beginning to the end of the delivery. When fed, the racket moves, as it were, along the arc that the head of the racket describes, from top to bottom. At the same time, the brush turns. The movement of the hand with the racket captivates the athlete's torso. The center of gravity moves to the left leg. The final rotation of the brush is the key point in the feed. When the brush is triggered after hitting the wave, the hand accompanies the wave by inertia. For all badminton feeds, the highest point of the racket head at the time of impact should be significantly lower than the lowest brush point (Figure 7).



Fig. 7 High supply

Major Errors:

- 1) stand or side to grid or parallel to grid;
- 2) the swaps are not strictly backward, the brush is not withdrawn;
- 3) the wave is kept or too close to the body or too far;
- 4) body weight is not carried forward by the standing leg.

Low supply by the open side of the racket

Initial position, lock, first phases of movement, as with high feed. But at the final stage, immediately before the strike, the movement slows down and instead of a powerful, whiplash strike on the wave, a soft, smooth movement of the hand with a racket is carried out, a light turn of the hand is made – and the wave flies low over the net into the front zone of the reception field (Figure 8).

Major Errors:

- 1) the volan keeps too far aside;
- 2) the lock is too long;
- 3) use in brush supply;
- 4) the strike is too strong – the movement of the racket is too fast.

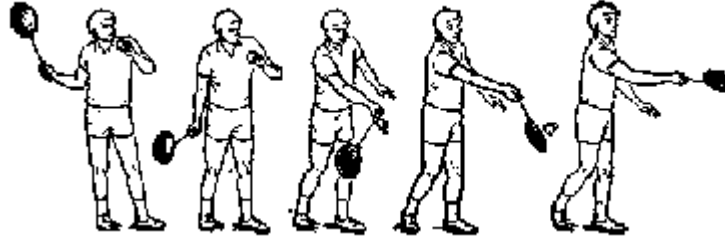


Fig. 8 Short Feed

Low supply by the closed side of the racket

If with the open side of the racket, the right leg was behind, now it is in front. The racket moves smoothly from under the left hand. At the time of impact, the brush connects, rising sharply up. In all blows, the closed side of the racket is the main brush. This type of feed is widely used in doubles (Figure 9).

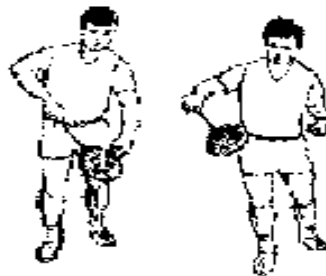


Fig. 9 Low (short) supply by closed side of racket

Major Errors:

- 1) the wave and the racket are too close to the torso;
- 2) elbow raised not high enough;
- 3) an attempt to hit the volan only with a brush;
- 4) impact above the belt.

Flat feed

With a flat feed, the volans try to send parallel to the floor, directing it to the far corners of the enemy's platform, to his body, or shoulder. If such a pitch is unexpected, it can immediately bring a point or at least put the opponent in a difficult position.

Choosing the directions of the flat feed, you must carefully understand the position of the opponent. When applying such feeds, it should be remembered that a significant part of the feed area is bare. And if the enemy confidently repelled the first such submissions, then in the future they should be abandoned.

Major Errors:

- 1) the arms are parallel to the grid;
- 2) the work of the legs is slow. During the impact, one leg was torn off the floor;
- 3) the lock is too short – an attempt to hit only one brush;
- 4) a blow to the wave is made with a straight hand;
- 5) the wave strikes too close at the body.

When improving this type of feed, special attention should be paid to the force of a blow to the wave so that it flies rapidly. This is achieved by rapid and vigorous extension of the brush. The flight path of the wave should be possibly lower so that the host cannot hit the wave with a blow from above (smash).

Serve return

When receiving the feed, half–turn to the grid at a distance of 1.3 m from the front line of the feed area. In the right field, stand at the most central line, in the left – approximately a meter from it. Stand freely, without tension, bend your hands, lift the racket head.

During the game, the badminton player has to beat off the wave from various areas of the site. The correct starting position, which the player must occupy before hitting, helps to quickly enter the wave. The player's legs are on the width of the shoulders, slightly bent, the shoulders are parallel to the net. Before reaching the impact, the severity of the body is transferred to the front of the foot. The racket is slightly raised.

Occupying the initial position, at first it is better to be in the center of the site, about 3.3 m from the grid, at the intersection of imaginary diagonals of a rectangular court. As skill grows, try to take the starting position somewhat closer to the grid than the geometric center. This will allow you to play a more active game.

In single games, high serve is most often used. They reflect it with blows from above the open side of the racket with a high shortened, smash. As these and other most common beats are performed in badminton we will describe below.

Blows

High distance (high attacking) strike

This technical element is performed at the back of the platform.

Swing. Taking a step with his right foot to the flying wave, the athlete raises his left shoulder. The hand with the racket is held in front of the chest, the left one rises up, towards the flying wave. Turning the torso with his left side to the net, the athlete, as if twisting it around a vertical axis, accumulating energy, which is then realized when the right shoulder is brought forward. The shoulders turn to the right, the elbow rises up, the hand with the racket straightens slightly in the elbow joint, the most optimal angle at this moment is 90 –100°. Then the hand bends in the elbow joint, starts behind the head and drops behind the back, the racket at that moment hangs freely. Muscles are in a stretched state. The pose resembles a strained onion. When performing a swing, it is necessary to ensure that the brush, as in previous strikes, is slightly ahead of the movement of the racket head.

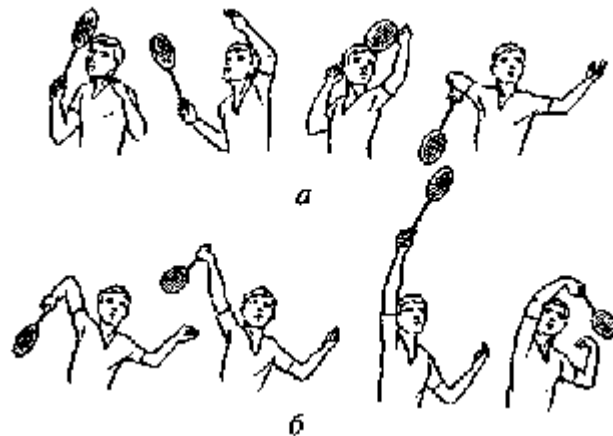
Blow. From the pose of the stretched bow begins the main shock phase. Rotation of the torso in the direction opposite to the retraction of the right shoulder during swing is facilitated by the value and difference of the rotation angle of the pelvis and shoulder girdle. Vigorous ejection of the right arm forward ends with a rapid stop of this translational movement. At the time of the meeting of the racket with the wave, the hand with the racket, continuing to unbend with acceleration, realizes the energy accumulated during the swing in the blow. This happens at a point above the center of gravity or just ahead.

Conducting – final phase. It is performed by the right arm, hand with a racket in the direction of the selected target in the plane of the final part of the loop.

Foot work. Running back, you should take the following position: right foot behind, left slightly in front. The feet are arranged in this way: the left forms an angle 20 –30 ° with respect to the wiring line, and the right forms an angle with the same line 80 –110 °. The CTC in the initial phase of the swing is above the left foot or distributed evenly, in the final phase of the swing – above the head. By the time the impact phase is completed, the left leg is pulled up to the right leg. If the impact is performed in safe position, then the left leg is put first in place right or a little further, to the back line. This work of the legs allows you to better maintain balance, bring the CT forward, quickly return to the game stand. The location of the stops changes at this point. The foot of the left leg is located behind the right, the common angle formed by the feet is shifted to the left, drawn through the heel and sock of the right leg, coincides with the wiring line.

Major Errors:

- 1) the impact was made with the torso falling back;
- 2) the torso parallel to the mesh; this error is usually accompanied by improper grip, kick with a bent hand away from the torso;
- 3) hasty impact – slow foot work, error or lag with swing;
- 4) the point of impact is too far above the head, there is no forward movement of the torso with a blow, no brush movement (fingers on the handle are too compress drackets).



a – lock; b – overhead impact

Fig. 10 Lock and a blow over the head

Short – close impact

Having determined the direction of flight to the rear line, the athlete tries approach the place of the proposed landing in a timely manner. The preparatory phase begins – the torso unfolds, the hand with the racket is retracted: the preliminary phase is performed – the sword. These movements are no different from the movement of the swing, for example, when making a high laugh. Then follows the shock phase, which begins as actively as if we performed smash. Then there is a rapid slowdown in the translation of the hand with a racket towards the wave. The elbow joint overtakes the wrist, and the wrist overtakes the rim of the racket. Here is the main characteristic detail of the impact phase of soft impacts.

The athlete, starting to perform smash, at the very last moment, when the enemy believed in performing a strong blow, suddenly changed his mind, slowed down the forward movement. The shorter this phase of deceleration, the less time the opponent will have to recognize the true nature of the blow, determine its direction.

Conducting. Touching the wave, the string surface long accompanies it forward. The wave at the beginning of the wiring touches the bottom of the racket

head and then passes along almost the entire string surface. Observations have shown that novice players use this type of shortened blow, and qualified athletes prefer a short – quick blow and do not use soft kick at all in pair games (Figure 12).



Fig. 11 Short – close impact

Smash and semismash

The most effective of the attacking strikes and are performed in both supporting and safe positions. It is performed as well as a high–altitude blow, but the point of impact on the wave is slightly ahead of the head.

Basic errors during laughter:

- 1) a blow is made on the wave falling behind the head;
- 2) attempt to strike the wave down using a bent hand at the expense of only one brush;
- 3) loss of power due to compression of the handle with a brush and unrecovered brush;
- 4) pulling the torso up – with only one blow hand.

Flat blow

This technique relates to attackers and is generally performed from the middle and less often the back of the platform, at the middle height level, on the side of the player and is used to accelerate or complete the game.

Swing. Having taken a step with his right foot to the side or a little back, the athlete takes away his right shoulder a little back. The hand is also retracted. There is a kind of twisting around the vertical axis, which ideally crosses the CT. The whole body resembles a spring, one end of which is pulled away.

Blow. It begins with sequential unwinding of all parts of the torso. First, the shoulders turn to the left, then the hand straightens and, finally, the wrist with the racket. The broken line formed by all components flattens and by the time of impact forms one straight line coinciding with the plane of impact.

Conducting. When performing these strokes – short, the wiring line is perpendicular to the impact plane.

Major errors in flat impact:

- 1) the arms are parallel to the grid;
- 2) the work of the legs is slow; during the impact, one leg is torn off the floor;
- 3) the lock is too short – an attempt to hit only one brush;
- 4) a blow to the wave is made with a straight hand;
- 5) the wave strikes too close to the body.

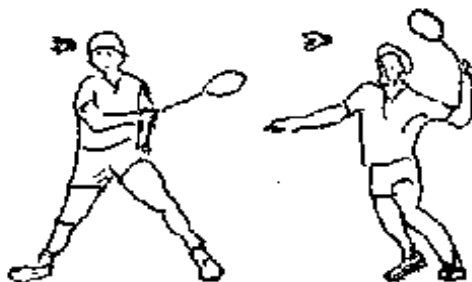


Fig. 12 Flat blow

Blows over the head with the closed side of the racket

As a rule, this blow is performed by athletes when the wave is directed to the far left corner of the court. The athlete did not have time to run back to hit the open side of the racket over his head. And in order not to be in an even more difficult position, he is forced to strike over the head with the closed side of the racket, winning the time it took to prepare for the strike. Having completed the blow, the athlete quickly returns to the central position. Despite the fact that this blow is not as active as a blow over the head of the open side of the racket, many players perfectly possess this technical element, thus significantly enriching their arsenal.

To perform a blow over the head with the closed side of the racket, first of all, you need to meet the wave as early as possible, i.e. high and close at the net, so as to direct it from top to bottom. The most convenient position for this option of hitting: with the back to the net, the right leg is located closer to the back line, and the left – closer to the net (Figure 13).

Swing. The preparatory phase begins with a step of the right leg back, turning the torso back to the net, as well as changing the grip of the racket. When playing with the side of the racket closed, the main load is carried by the thumb. Performing the main impact phase, you begin to unbend the legs and, raising the elbow, lower the wrist down, overtaking it with the elbow joint, thus creating conditions for maximum acceleration of the racket. In order to increase this acceleration and more fully use the force of the extensors of the hand, at the time

of swing, the wrist is strongly twisted (suppressed) with the palm. Further, the arm in the elbow joint with acceleration straightens, and the hand spins and unbends. The hand with the racket at the time of impact is completely straightened. There is no posting of the wave as such.



Fig. 13 Initial position when striking from the left above the head

Flip, stand

Flip. This technique is performed at the front of the site, at or below the top edge of the grid.

Stand. Taking a step right forward or to the side, you need to make a loop with your hand. Its size may be different, but it should be remembered that in the phase of swing, the brush always overtakes the head of the racket.

Conducting. This is the final phase of the loop movement. The hand with the racket, forming a rigid system, continues to accompany the wave along the line of the desired direction. The plane of the impact and final phase of the loop coincides with the direction of the target and is crucial in the accuracy of the technical element as a whole.

Support. This technique is performed in two embodiments at the front of the platform, closer to the upper edge of the grid. The main requirement for the speed of execution and the height of the wave reception. The characteristic feature of this technical technique is the absence of a swing, and the shock phase resembles an injection in fencing.

The first option. Volan touches the racket at the upper edge of the grid. At the same time, the right leg is put forward, the hand and racket form an almost straight line. The transaction is short. The string surface is under the wave.

The second option. Volan, touching the string surface, seems to knock the racket out of his hand. The brush continues to move forward, and the head of the

racket lags behind. Due to the speed of execution, the impression of flipping from the grid is created. The wiring in this case is longer and starts on the right or left, depending on the impact.

Mistake. Early hand throwing the racket forward.



Fig. 14. Support

You found out what blows the badminton player should own. Now you can start the game on the score.

Foot work and movement on site

- a) basis of correct impact production;
- b) allows the body weight to be "thrown" into the blow;
- c) the impact must be carried out with the correct setting of the legs;
- d) avoid, if possible, being deceived during movement; do not stand on the spot and do not "admire" your blow;
- e) avoid inertia – stand with heels raised, legs slightly bent in knees on the width of the shoulders;
- f) the post depends on the direction of the intended movement to a volan flying from the enemy.

8. GAME TACTICS

Since the platform is longer than wide, the main game is based on forcing the opponent to move along the platform and look for his mistakes in this direction and, therefore, the main blows should be high–range and short (shortened) blows. Basically, the game is built on blows to the free zone, that is, a zone where there is no opponent.

Thus, it is necessary to perform each subsequent strike away from the previous strike. For example, a candle to the rear left corner, short to the right near corner, then again a candle to the rear left corner, and so on, until the enemy is mistaken.

Doing this all the time, you will not force your opponent by surprise and, although he will have to run large segments along the site, you will never put such a game at a standstill. Hence the following changes – the repetition of a particular strike in order to create uncertainty among the enemy – what blow to wait for, what blow to next. For example, a candle to the rear left corner, a candle to the right rear corner, a short to the left front corner, etc.

Such conduct will tell you the weaknesses and ability of the enemy to move in various directions or in the effectiveness of certain strikes. This will make it possible to use the weak point of the enemy.

However, the basic principle of a "free" zone should never be forgotten. All this is based on your ability to strike from anywhere on your site to anywhere on the enemy site. Therefore, improve the technique of blows.

When you are in a difficult situation, perform a high–altitude blow (candle) as high as possible, as the ceiling in the hall will allow, in order to win and prepare for the continuation of the draw, but if you are not in a difficult situation, then you must carry out attacking candles in such a way that the wave flies beyond the reach of the raised enemy racket. Often, the impact of the closed side of the racket is not so strong and therefore the attacking candle in the rear left corner is often successful.

After each blow, you should return to the game center of the court, but you need to do it so that the enemy cannot make his blow during your movement to the center. Remember that the location of your game center should depend on the possible directions of your response and thus it can change slightly depending on where you send your hit.

The game presents a number of rules without which success in modern badminton is impossible:

- ✓ *high–speed movement on site;*
- ✓ *meet the wave as early as possible and as high as possible;*
- ✓ *look at the wave during the impact;*
- ✓ *Be careful to maintain balance;*
- ✓ *attack and once again attack;*
- ✓ *"kill" the wave without ceremonies;*
- ✓ *hold the racket up.*

9. CONCLUSION

It should be noted that badminton is a very effective means of promoting the health and physical development of students, since all movements in badminton are natural in nature and are based on running, jumping, throwing, which contributes to the development of strength, dexterity, endurance, flexibility, respectively.

The game causes qualitative changes in the engine. Jumping game actions strengthen the musculoskeletal system, improve joint mobility, increase muscle strength and elasticity. Gaming activities in general improve all the functions of the student body. This is an important fact, since in the existing rhythm of study of a modern student it is not easy to find an interesting, easily accessible sport that has a positive effect on the young person's body of such a wide range. Constant wave tracking improves deep and peripheral vision, develops responses to visual and auditory signals, increases muscle sensitivity and the ability to rapidly alternate muscle stresses and relaxations. You shouldn't forget that in the course of game activity the engaged young people show positive emotions: cheerfulness, cheerfulness, initiative. Due to its emotionality, badminton is a means of not only physical development, but also active recreation of students.

I would like to emphasize once again that the badminton game is characterized by a variety of motor activities, including: fast running and sharp stops, outbursts and instant turns, soft short movements, mainly on socks, jumping up with performing shock action, all kinds of tilts, torso turns in combination with a high concentration of movements and accurate blows on the wave. All of the above gives the right to consider badminton a rather difficult (technically) game, in the process of which almost all muscle groups involved are involved.

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