# Analysis of tactical variations in position 3 offense in volleyball matches

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**Abstract:** With the rapid development of volleyball techniques and tactics, offensive tactics have become more diverse and complex, which in turn has placed higher demands on the tactical variations of Position 3 players. Through extensive literature review, it was found that current scholars mainly focus on the blocking techniques against fast attacks and the cultivation of offensive tactical awareness for Position 3 players, with limited research on the integration of these two aspects. This study employs literature research, expert interviews, and video observation methods to analyze the tactical variations of Position 3 offense in response to blocking tactics, providing a theoretical basis for enhancing the tactical variations of Position 3 offense in volleyball matches.

**Keywords:** Volleyball match, Position 3 player, Offensive tactics, Variations

## 1. Introduction

With the continuous enrichment and improvement of blocking techniques and tactics in volleyball, higher demands are placed on the tactical variations of Position 3 players. In the volleyball offensive and defensive tactical system, offensive tactics are generally divided into power attacks, quick attacks, and three-dimensional attacks, with Position 3 players mainly focusing on quick attacks and various feints combined with quick attacks. Since the 1980s, quick attack tactics, with a success rate of over 50%, have always played an important role in the volleyball offensive system. The initiation of quick attacks is generally centered around the vice-attacker, combining individual and collective tactical cooperation. Therefore, research on the individual offensive tactics of vice-attackers will help enrich the theoretical framework of volleyball offensive tactics and lay a theoretical foundation for the continuous development of volleyball in our country.

This paper analyzes the tactical variations of Position 3 players and how to break through the opponent's block by observing and statistically analyzing video materials from the 2011–2012 National University Volleyball League Championship. The findings provide a reference for vice-attackers in regular training and competitions, and have far-reaching significance for the development of volleyball.

## 2. Research methods

### 2.1. Literature review method

By observing matches on-site and analyzing match videos, statistical data obtained from both live observations and video recordings were analyzed. Additionally, extensive literature related to the offensive and blocking tactics of vice-attackers was collected from the China National Knowledge Infrastructure (CNKI). These materials provided a solid theoretical foundation for this study.

### 2.2. Video observation method

By observing the video recordings of the 2011–2012 National University Volleyball League Championship matches, the characteristics of the offensive tactics of vice-attackers and the blocking tactics of opponents were analyzed. This provided a solid theoretical basis for understanding the tactical variations of Position 3 offensive plays in volleyball matches for this study.

### 2.3.  Expert interview method

By interviewing the head coaches participating in the competition, we gained insights into the current status of the offensive tactics of vice-attackers and the application of blocking tactics in various university volleyball teams. This also provided valuable suggestions for the tactical variations of Position 3 offensive plays.

## 3.  Classification and characteristics of position 3 offensive tactics

### 3.1.  Classification of position 3 offensive tactics

The secondary attacker executes the 3-position offensive tactics, which can be categorized based on the degree of coordination with the team into self-screening individual offensive tactics and individual offensive tactics within collective coordination, etc.; based on the location of the offensive breakthrough point into 2, 3, 4 positions and back-row attacks, etc.; based on the timing of the attack into quick attacks, semi-quick ball attacks, strong attacks, etc.; based on the take-off technique into single-leg take-off, double-leg take-off, etc.; and based on the means of avoiding the block into time difference, position difference, and space difference attacks, etc. [3].

Since the secondary attacker mainly relies on flexible and quick means to break through the opponent's defensive system, rather than relying on absolute height and strength (which are characteristics of the main attacker), the classification of the 3-position offensive tactics for the secondary attacker is generally based on the means of avoiding the opponent's block. This article briefly discusses the offensive tactics of the secondary attacker, mainly referring to self-screening individual offensive tactics. Through analysis, it is concluded that the offensive tactics of the secondary attacker can generally be divided into time difference attacks, position difference attacks, space difference attacks, and combined three-difference attacks, etc. Time difference attacks are divided into front and back quick time difference, short flat quick time difference, and back flat quick time difference; position difference attacks are divided into front and back quick misplacement, flat pull misplacement, short flat quick misplacement, and back flat quick misplacement; space difference attacks are divided into pull three, pull four, front, back, and rear fly, side float, and single-leg front, back, and rear fly; combined three-difference attacks are divided into front and back quick misplacement time difference, and front and back quick misplacement single-leg back fly [4].

### 3.2.  Characteristics of position 3 offensive tactics

The offensive tactics of the secondary attacker are based on height, strength, and speed, but they emphasize the element of surprise to evade the block, aiming to exploit the fleeting moments of a single block or no block to strike swiftly and accurately, thereby breaking through the defense. Therefore, the offensive tactics of the secondary attacker primarily include evading the block and executing quick, precise spikes, with the focus being on how to avoid the opponent's block.

The characteristics of the 3-position offensive tactics mainly include: time difference attacks, which primarily utilize the difference in the timing of the attacker's jump to deceive the opposing blockers, achieving the goal of an unblocked attack; position difference attacks, which mainly rely on the difference in the attacker's jump position to escape the opposing blockers, aiming for an open-net attack; space difference attacks, which leverage the residual horizontal thrust from the attacker's jump to create mid-air displacement, combined with the attacker's aerial control, to evade the opponent's block and execute the attack; and combined three-difference attacks, which integrate time difference, position difference, and space difference attacks to evade the block and enhance the success rate of the attack, representing an individual offensive tactic [5].

## 4.  Analysis of the theoretical basis for position 3 offensive tactics and blocking

Blocking is one of the fundamental techniques in volleyball, serving as an effective means to counteract the opponent's offensive tactics. It acts as the first line of defense and is a crucial scoring method in volleyball matches. Blocking can directly stuff, deflect, or return the opponent's spike, leading to immediate points or gaining the serve, thereby limiting the offensive capabilities of the defending side, alleviating defensive pressure, and creating more opportunities for counterattacks. Effective blocking exerts significant

psychological pressure on the defending team and can effectively diminish the opponent's offensive momentum [6]. Currently, as spiking techniques evolve in terms of power, height, speed, and variation, the importance of blocking has become even more pronounced. Enhancing the systematic technical level of blocking and defense can actively create counterattack opportunities, which are pivotal to winning volleyball matches. Blocking is a critical component of counterattacks, and more importantly, the opponent's first block serves as a key basis for formulating tactics. The current forms of blocking mainly include man-to-man blocking, zone blocking, and crossover blocking.

Man-to-man Blocking: The front-row players of the defending team closely mark the attackers of the opposing front-row players.

Zone Blocking: The defending team's position 2 player marks the opponent's position 4, the position 3 player marks the opponent's position 3, and the position 4 player marks the opponent's position 2. The position 3 player can move laterally to coordinate with the position 2 and 4 players, forming a multi-player block.

Overlap Blocking or Crossover Blocking: The middle blocker closely marks a quick attacker, while the side players perform a second jump for blocking. Moving to the right side of the position 3 blocker is called right overlap blocking, and moving to the left side is called left overlap blocking [7-9].

## 4.1. Analysis of man-to-man blocking and position 3 offensive variations

### 4.1.1. Back pull-off

The back-row pull-off attack typically refers to a situation where the setter passes a fast, low-arcing ball, and the spiker jumps about 2 meters away from the setter to strike the ball as it is pulled across. Depending on tactical needs, the spiker can use the net position to hit the ball earlier or later. This type of spike is powerful due to its high speed, low arc, and multiple hitting points in the air, and it can also be used as a decoy to form various collective offensive tactics.

When the vice-attacker runs to Position 2 to execute a back-row pull-off attack, the player in Position 2 moves behind the setter to hit a semi-high ball. If the opponent's vice-attacker tries to block the back-row pull-off attack at Position 2, their movement will block the blocking route of the opponent's main attacker in Position 4, leaving them stationary. As a result, the attacking player in Position 2 on our side will face no block (as shown in Figure 1).

### 4.1.2. Back quick

The technique refers to a player jumping from the back row to spike a fast ball. The spiking technique is essentially the same as that of a quick attack. Due to the greater distance from the net, it demands accurate judgment and timely take-off, and it utilizes the forward momentum of the jump to increase the speed of the hit. Given its high technical difficulty and the significant physical demands, this technique is more commonly used by male athletes.

When the vice-attacker runs to execute a front quick attack, it can deceive the opponent's player in Position 3. In the context of man-to-man blocking, the blockers in Positions 2 and 4 on the opposing team need to focus on the two attackers on the offensive side and cannot easily form a triple block with the player in Position 3. As a result, Position 3 is left unblocked, creating an opportunity for the player in Position 6 to attack without facing a block (as shown in Figure 2).
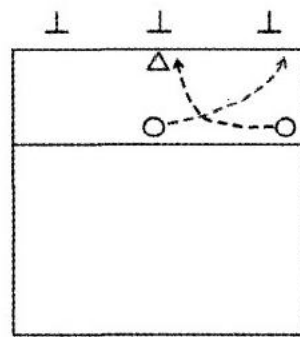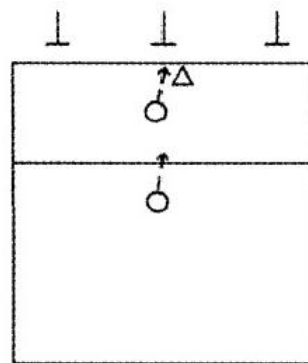
Figure 1: Back Slide



Figure 2: Back Quick

### 4.1.3. Time difference

The setter intentionally alters the tempo of the pass, slowing it down to deceive the opponent into thinking that one of the above three tactics is being used. As a result, the opponent's block follows the vice-attacker's first feigned jump and is deceived. When the vice-attacker lands and jumps again, the ball is perfectly timed to be in place, while the opponent's block has already started to descend, often creating an open net for the attack.

When the vice-attacker runs to execute a near-body quick attack, they make a feigned jumping motion on the last step to induce the opponent's middle blocker to jump. As the opponent's middle blocker descends, the vice-attacker hits a straight-line spike, creating an unblocked attack and increasing the chances of scoring (as shown in Figure 3).

### 4.1.4. Flat pull-off

This technique is also a personal spiking tactic. The spiker feigns a jump to hit a quick ball, attracting the opponent's blockers. When the blockers jump to block the feigned attack, the spiker quickly steps to the side and jumps to spike the ball in an unblocked area. This tactic uses intentional positional errors in passing to help the spiker evade the opponent's block and achieve an open attack. The flat cross tactic is effective and requires the attacker to convincingly feint, switch between real and fake actions, and closely coordinate with the setter (as shown in Figure 4).
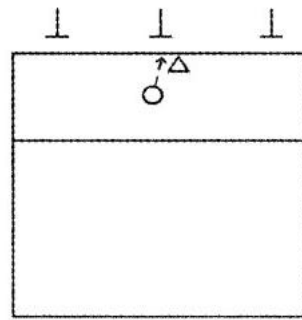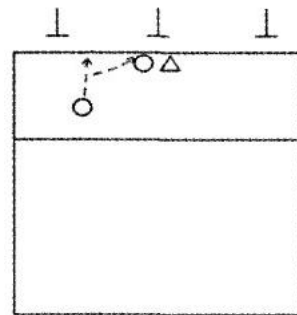
Figure 3: Time-Difference Attack



Figure 4: Flat Cross Attack

### 4.1.5. Single-foot back-slip

The single-foot back-slip attack is generally used when changing direction or when the ball is far from the player. Using a single-foot take-off for the spike can increase the speed of the jump and fully utilize the forward momentum, allowing the player to jump higher and farther and strike the ball more effectively in the air. This tactic is commonly used for attacks between Positions 2 and 3.

When the vice-attacker runs behind the setter to execute a single-foot back-slip attack, it can pin down the opponent's player in Position 3. If the opponent's player in Position 4 does not join to form a double block, the vice-attacker may score directly. If the opponent's players in Positions 3 and 4 do form a double block, it creates an open net for the attacking player in Position 2 on our side, increasing the chance of scoring (as shown in Figure 5).

### 4.2. Theoretical analysis of zonal blocking and variations in position 3 offensive tactics

Short Flat Quick Attack**: This generally refers to a fast, low-arcing ball passed directly by the setter. The spiker jumps about 2 meters away from the setter and strikes the ball as it is pulled across. Depending on tactical needs, the spiker can use the net position to hit the ball earlier or later. This type of spike is powerful due to its high speed, low arc, and multiple hitting points in the air, and can be used as a decoy to form various collective offensive tactics.

When the opponent's blocker in Position 2 focuses on the short flat quick attack, the player in Position 3 on our side executes the short flat quick to pin down the opponent's blocker in Position 2. Meanwhile, the attacking player in Position 4 on our side hits a flat pull-off attack, creating an unblocked opportunity. When the opponent's blocker in Position 3 focuses on the short flat quick attack, the player in Position 3 on our side executes the short flat quick, while the player in Position 4 hits a semi-high ball in front of the setter (the second attack point), thus creating an unblocked opportunity (as shown in Figure 6).
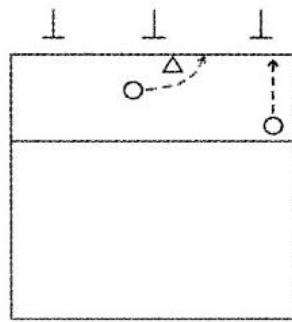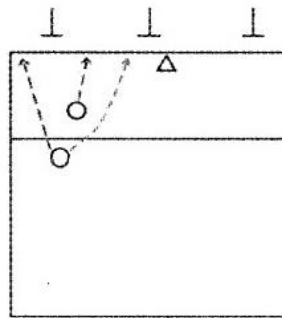
Figure 5: Single-Foot Back-Slip



Figure 6: Short Flat Quick

### 4.3. Analysis of cross blocking and position 3 tactics

*4.3.1. Near-body quick attack*

The near-body quick attack refers to a fast ball spiked close to or beside the setter. It is characterized by its fast rhythm and strong impact, and it serves as an excellent decoy. A high-level near-body quick attack requires the spiker to jump just before the setter releases the ball and to strike it in the air. The purpose of the near-body quick is not only to score directly but also to distract the opponents and create opportunities for teammates, forming a variety of flexible and versatile collective tactics.

When the vice-attacker runs to execute a near-body quick attack, it pins down the opponent's blocker in Position 3. Then, the player in Position 4 on our side hits a semi-high ball in front of the setter, which is known as the echelon tactic. This movement deceives the opponent's player in Position 3, creating an unblocked opportunity for the player in Position 4 (as shown in Figure 7).

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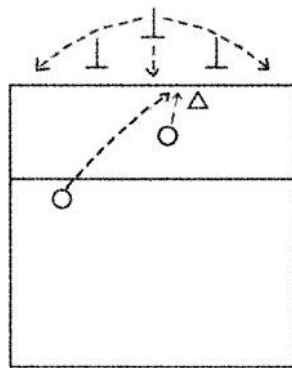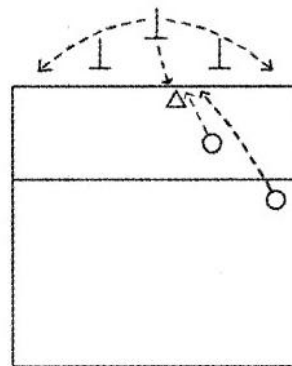
Figure 7: Near-Body Quick Attack



Figure 8: Back Quick Attack

In summary, in volleyball matches, the transition between offense and defense is rapid, with points being scored or lost in an instant. Therefore, no effective offensive opportunity should be abandoned. To enhance the effectiveness of attacks, the offensive role of Position 3 players is particularly crucial and should not be confined to a single pattern. The attacks and decoys of Position 3 players are no longer limited to near-body quick attacks, flat pull-offs, and semi-high balls. Instead, through training and matches, the movement of Position 3 players should be strengthened to enrich their tactical variations and diversify their decoy tactics. Only by fully utilizing our team's offense to suppress the opponent's blocking and defense can we achieve the goal of winning.

## 5. Conclusion

The variations in Position 3 offensive tactics should be based on the opponent's blocking strategies, rather than simply executing tactics in a rigid manner, which would fail to unleash the full potential of each tactic.

Position 3 offensive tactics are an important means of scoring and should be frequently employed in matches. When power attacks are ineffective in scoring, Position 3 offensive tactics can, to a certain extent, reverse this passive situation.

The implementation of Position 3 offensive tactics requires athletes to possess agile and rapid movement capabilities, as well as the ability to observe and adapt quickly. These qualities are crucial for athletes to effectively vary their tactics in Position 3.

In regular training and practice matches, the tactical cooperation between the vice-attacker and the setter should be strengthened under various blocking scenarios from the opponent. Only in this way can the vice-attacker execute tactical variations with ease in official matches, leaving the opponent's blockers confused.

During regular training and practice matches, setters should also frequently set balls for the vice-attacker even when the pass is not perfect. This helps to develop the vice-attacker's offensive awareness and can also

catch the opponent's blockers off guard. An imperfect pass that still leads to a vice-attacker's attack can also distract the opponent's blockers, thereby reducing the pressure on the main attacker.

In regular training and practice matches, it is essential to specifically train the vice-attacker's ability to execute Position 3 tactical variations under various blocking scenarios. Vice-attackers should be encouraged to develop the characteristics of winning with intelligence, focusing on variability, combining feints with real attacks, and maintaining dynamic speed. These qualities will make them a highly dynamic component of the modern volleyball offensive system.

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