

## Discussion on Development of Three-Dimensional Cross Fast Break On the Basis of Cross Offense

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**Abstract**—The often used partial cross tactic has been widely understood by foreign powers at present. The phenomenon frequently occurs when stopped back in the attack, we should say that cross offense is aging. In recent years, some experts advocate new ideas of fast break from the back, therefore, in order to achieve a breakthrough in the attack, constantly update the tactical systems, after ideas thinking and experiment. This paper tries to develop three-dimensional cross fast break on the basis of three-dimensional storm attack. expand the original tactic of cross offense from the front, provide reference for level-two or higher athletes in the tactics choice

**Keywords:** volleyball; three-dimensional attack; tactical innovation; cross offense; three-dimensional cross fast break

### I. INTRODUCTION

Fast break tactic is the offense first used by our athletes, trace its source, it has been temporarily outcrop angle in the 1930s, in international competitions the 1950s has formed a certain tactical mode, has won great concern from the world row of the altar, afterwards, fast break tactic on the basis of back fast, opened flat, short plat fast, back slide, used the form of combination of cover and buckle, formed various tactics series with quick changes, combined with cross running attack in South Korea further. they developed the fast attack, formed five cross-running attack, namely: five kinds of traditional cross attack of the former cross, the after cross, the back cross, anti-cross. fake cross, once all the rage. it must be said that cross. running attack has certain advantages. This cross attack has the great sudden, aggression, effectiveness. is the most common use of a play, which is mainly interfere the person-to-person blocking. At present, the traditional cross tactics has been understood by foreign powers, so on the basis of three-dimensional fast break, develop tactic Of three-dimensional cross fast break. is not only extension of the original tactic of cross offense from the front, but also a innovation of a number of new tactics[1].

Therefore, in order to achieve a breakthrough in the attack, must according to one's own characteristics. play strengths, break others' short by one's own length, must

be able to effectively avoid the block of the other side, in order to play new situation of the more beat the less over the net, the quick beat the high, the small beat the big. which depends on innovation, constantly update our tactical system, in view of this, this paper based on the fast break system that Asian volleyball rules the world, carried out an in-depth analysis of the system, and on the basis of traditional cross running attack. and the study of my mentor, through ideas thinking and experiments, in an attempt to develop three-dimensional cross fast break on the basis of three-dimensional storm attack, expand the original cross-offensive tactics from the front, provide reference for level-two or higher athletes in the tactics choice.

### II. EXPERIMENTAL SUBJECTS AND STUDY METHODS

#### A. Experimental Subjects

In this paper, experimental subjects are key players in volleyball team and some volleyball postgraduates of Xi'an Physical Education University. Key players in volleyball team of Shaanxi Normal University, key players in volleyball team of Xi'an Jiaotong University. a total Of 19 players are two-level volleyball players. stands in 180cm~193cm, the training period were more than three years.

#### B. Research Methods

In the course of this paper, written mainly in literature, observation, experimentation, logical analysis, comparative analysis, to achieve the ultimate statutory purpose.

### III. RESEARCH RESULTS AND ANALYSIS

#### A. Definition of Traditional Cross Offense and

Tactic Characteristics Cross offense is that two players running attack. The run-up lines intersect. played the role of cover each other, resulting in local area situation of the more beat the less. Including five typical cross offenses of the former cross, the after cross, back cross, anti. Cross, and fake cross, Cross offense, this style of play is relatively simple. it was too late to determine the real

spike in those block those two running the team, so a large sudden, aggressive.

Which is the most common use of a play. for against the man to man blocking, effect is very good. In use of cross offense, according to the different cross-tactics. Determine the appropriate placement of first transmission. The height of second pass should not be too high, and the fast ball players should not be too far away, usually from the players with the spike about 1 m apart, so as to avoid the other block players move up bar. Cross-running the spike player, the timing of the run-up to step on should right, usually shot in the first pass. the ball will reach the setter's hands, began to cross running, start too early, will easily seen through, or affect fast ball players' running; too late, too late to buckle half the high ball or because of too high let the other have time to make up bar.

#### *B. Advantages and Disadvantages of*

**Traditional Cross Running Attack Tactics** The traditional cross running attack can effectively destroy the opponent's man to man blocking. This fast ball cover with cross-running style attack, can be more effectively confuse the other party, and easily caused moving obstacles in the other man to man blocking, leading one block is difficult to choose off location, loss of opportunity to block. and even the formation of other invalid defensive. so that the other block too late to determine the real two players who were running spike, a sudden and strong, aggressive, spiking is easy to break, mainly in time to win. The traditional cross running attack can use cross-cover in cross running attack to play open tactic, relieve pressure on the attacking side, so the offense easy to break through the blocking, easy to form an empty attack. The tactics combination of traditional cross running attack is relatively simple, make the team easy to master, players can form tacit understanding between the attack. The traditional cross running attack, tactical changes are more. able to take full advantage of net length, the tactical coordination is extended laterally, combine a variety of positioning fast ball, dislocation fast ball, some three poor offense and other techniques to enrich tactics combination, in the virtual actual situation of the spike action, confused the other team blocking from the time, location, space, cause of illusion of blocking team to determine, thus greatly reduce the effective blocking rate.

#### *C. Problems Exposed in the Present Traditional*

**Cross Running Offense Tactics** The traditional five kinds of cross running offense is widely used in the world teams at present, has been mastered by the world teams. and a higher degree of familiarity, especially the cross-running routes in running attack are relatively fixed, organizational strategy is too monotonous. usually the tactics with 2 to 3 people, tactical organization often} as a "block wheel" phenomenon[2] and the spike offensive position after the ball cross is relatively fixed, and the curvature and effective net segment of the ball hitting are relatively fixed, for teams in the world who have experienced players, if the judge, elected position and off

time are proper, the ball can easily be sealed. And studies at home and abroad to crack this tactic are more. to deal with this tactic, the general tactic is the blocking of people stare area, each team is also more clear about the responsibilities of each position, and contact information can be timely. and in a timely manner the composition of the double block. block this cross attack of the ball. In traditional cross offense. combination with the other self-cover after cross. Running, such as the offensive play. despite the tactical change much. but the physical demands on players are higher, both a jumping ability, air. body balance. the original capability to take off fast-moving capabilities. technically demanding is difficult in the full implementation of the entire team, that is, individual players can master. and the target is significant. It is easy to block by the other players, and, the use of round is also limited. tactical effectiveness and quality are not necessarily significant. Traditional cross offense is confined to the front row player in the two point attack, when there is two point in the attack with the 5-1 dispatch. The cross offense becomes relatively weak: in addition, offense point in traditional cross offense is relatively fixed. more concentrated and difficult to break block. lack of storm attack points. if two players meet in case of failure, and no player to organize the storm attack, so that fewer offensive points. with tactical attack only in a flat state, do not take full advantage of tactical depth. not consistent with the "three dimensional" thinking in modern volleyball.

#### *D. Analysis of Ideas Based on*

**Three-Dimensional Cross Fast Break Tactic Vision** of a new tactical ideas. whether in theory or in practice. it should reflect the rationality and science, must have the purpose of tactical innovation. must be based on existing skills and physical fitness of team members, because the new tactical formation is not on paper. but surly into practice, to be accepted, adopted, and to improve, otherwise this innovation not to mention innovation, this assumption can only be fantasy, this paper based on my mentor's study. In. depth investigation and analysis, experiments. demonstrates that the idea is based on the following: The traditional system of cross defense confined by the front row to complete, when the use of cross-tactical offense. because of this combination are more familiar with each other, it is easy to organize anti-bar, not only cross fast break is the case, other fast break system only depend on front row players to attack also exist such drawbacks, but when the other team stop fast break attack of the front row, back row players followed behind, the jump button and spike the high point fast ball behind front row players or lateral ball, the fast ball from back row in short-flat-pull, just the whereabouts of block players. during the easy formation of validity, if coupled with the formation of cross by the back player running with the front line players, on references to the concept of the front cross to the rear, which is more confusing on the other side of me block. so that the other players lose chance up against the block, resulting in errors in

judgment, which can effectively break through the block, which occupied absolute advantage in time, space, position, so as to achieve the purpose of tactical innovation, and thus to achieve a strategic thinking to play less to more. Since this article breasted tactical thinking from the high point fast or a half ball of the back row. so the team members require a higher level of physical and technical fitness. As for the current physical quality in team. the height and jumping ability has a general increase, according to the experiment, the general professional male players as long as the height 3.20m, above this level already have a certain ability to post-breasted fast ball, when the back player button remote net high level fast ball, or a short-flat. Pull. once used the both feet jump or one leg a jump, the premise of hit the ball over the net but no outside. make the distance closer between hit points and the net. ball point and the height of the ball net line are lower. it is good for fast break the net. My mentor carried out the experimental tests of team members have the height of both feet jump and one foot jump, and the flight distance, experiments show that both players hop on one foot or both feet. distance after the jump 1.5 m to 2 meters, space within the height can be used effectively to hit the ball into the opponent area, the general professional volleyball players also have the jump 1 ~ 2 m air displacement, the effective height will be used strongly hit the ball over the net 1.2 to 1.5 m over net. in this article. several spiking of players on the back includes high fast ball, short flat pull, two of them, high fast ball from the ball line of about 1m~1.2m. short flat pull away from the ball line also about 1m. whether it is from the physical sense of the current members, or inferred in theory, allow players to accomplish this in different back curvature of the high fast ball is feasible, not to mention the real ball's flight line fight out of is not the ideal straight line. Usually on the spin of a certain curvature of the arc, the ball's flight path is generally on the first flight before going down, which is more proof of these types of ball players, back buckle successful is feasible. In addition, the higher level of physical and technical quality of members, from its point of attack with net is closer, and beer, and second pass can adjust the distance between the ball and the net according to the team, women's team because network is low. also has operations and implementation capacity.

#### E. Running Route Ideas Fast Attack Tactics of

Three-Dimensional Cross Fast Break Tactic Under the guidance of experts, according to the experimental verification and theoretical analysis, launched several instances of combination of traditional cross offense and three-dimensional attack, and since the new tactical ideas, carried out experiments in team members of Xi'an Physical Education University and volleyball professional athletes, volleyball team of Shaanxi Normal University, volleyball team of Xi'an Jiaotong University. improved the operational tactics, the tactics not operational were cut, now representative of the four latest offensive tactics of front row back row interchange are as follows: Shown in Figure 1, player No.4 play short-flat, fast track or near

cover the body, running route of player No.5 and running route of player No.4 form a cross lines| running jump high hit far net short flat; player No. 2, player No.3. player No. 6 observe the changes in the field, ready to defend and attack. Shown in Figure 2, player No. 3 play near fast cover player No.6 jump, combines with running route of player No. 3, form a cross. road to play far net high point short-flat-pull; player No. 2, player No.4, player No.5 observe the changes in the field. Ready to defend and attack. Shown in Figure 3, player No. 2 run-up to prepare the body close fast ball playing, running. route of back row player No. 1 and running route of-player No.2 form a cross and jump to play back far net high point short-flat-pull; player No-3, player No. 4,player No. 6 observe the changes in the field, ready to defend and attack[3].

#### F. Advantages Analysis of Three-Dimensional Cross Fast Break Tactic

Three-dimensional cross attack tactic, in the offense. front and rear running each other, cover each other, some times near net, sometimes away from network, and even hit the ball towards the depth position, break the routine. so that the other team members are difficult to determine the block and capture motivation and opportunity of "real buckle" crew, form a multi-button less or even result in a loss, no blocking of the "valid door" attack, the refore. the change in tactics on the offense. most likely cause the confusion of the other front, so that block members in the other team are difficult to determine. organize collective block. Three-dimensional cross attack tactic. change the front two cooperation for two or three cooperation in front and back in the match, an increase of offensive staff the front one or two other players can better compose the running attack, so that the other block will be difficult, the use of front and rear cover each other. can form at least the situation of two beat one, easy to break nets mouth. Three-dimensional cross attack tactic. the rear and front members cross buckle fast ball, On the basis of the opponent's block in confusion, shift the attack points back ward, and this shift is different from the back three-dimensional attack, stroke point is near over the offensive line. The back player of this cross. offensive, the offensive points are away from the offensive line at least 1.5 meters from point of view with effect of the tactical cooperation, the integration of front and rear, not out of line, can't easily be seen through the tactics intent by the other side, not easy to block, breaking the old pattern of fragmentation attack of front row and the back row, deeply develop the. cross tactic attack from near net to the far net, given the vitality of tactical attack. in addition. the back shift of spike points increases the scattering angle of spike, coupled with the fast running routes cross and the speed of fast ball. beneficial to attack and harmful to block. in the use of three. dimensional cross attack tactic. whether it is an attack on the return of serve, or defensive back, and even protect the ball, can use this tactic, completely break the old Pattern in the past that only the front to cross play, and

rear must use high ball in clear offensive rhythm. completely broken the old traditions and old ideas in an attack in the past that more fast break and cross in the front. so volleyball offensive tactics develop to three. dimensional cross fast break. in three-dimensional cross attack tactic, if back players use one foot jump, have unique advantages of the height, higher than double foot jump, far off flying distance, the effective attack range expanded, start faster, more powerful smash. so more effective in three. dimensional cross attack..

#### G. Precautions in the Use of Three-Dimensional Fast Break Tactic

Use three-dimensional cross fast break tactic. has high standards in the athlete's physical fitness and skill level. require level. two elite athletes, jumping height should reach at least 3. 1 5 m. the higher physical fitness and skill level. the distance of attack point to ball net will be the closer. the better attack. use three-dimensional cross fast break tactic. Pay attention to the starting order in tactical coordination, so as to avoid collision, the front person or the cover people should start running. Three dimensional fast break in the back run after. going to Pay attention to control their own body center of gravity after smash. avoid contact net and over the center line. In tactics. The run-up and take. off time are very important, should continuously run and skilled in order to accurately grasp. Use three-dimensional cross fast break tactic. requirements on the second pass are higher, the pass height and the placement should go through special training in order to reach a tacit understanding between the players, always pay attention to specialized training Of the second pass.

Positioning Figures and Tables: *Place figures and tables* necessary peripheral observations in the text (within parentheses, if you prefer, as in this sentence).

#### IV. CONCLUSION

Through experiments, the back row plays three-dimensional high point fast ball can use two skills. one is high-point fast ball close to the vertical. the other one is a

short-flat-pull high point ball. The experiment thinks that the rear player No.1 and front player No.2 help to play a short-flat-pull three-dimensional high point fast break, rear player No.6 and front player No.3 help to play three. dimensional high point cross fast break or short-flat-pull three-dimensional cross high point fast break, rear player No.5 and front player No.4 help to play short-flat-pull three-dimensional cross high point fast break.

Three-dimensional cross fast break carried out initial success experiment in the level-two sports team, can provide greater development for high level of professional teams in the implementation and operation , thereby providing reference for the selection of tactics.

Three-dimensional cross attack tactic has higher requirements for players cooperation, in the tactic cooperation, pay attention to the order of start and move, so as to avoid collision. This tactics vision has higher requirement on the players physical quality, and need to strengthen the physical training, increase jumping ability, in order to improve the startup speed and ball height. the experiment found that the one leg startup has fast speed and success rate is higher. allowing some players of more practice about one foot jump spike technique. Experiment found that when the first pass far from the net. the position of the second pass shift back. when the ball fast the back players can make button space for a wider net, more fully jump, more powerful spike, can be conceived as another line of tactical thought to provide.

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