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## **Rotations and Match-up**

In Volleyball, the movement of players among the six zones of the volleyball's half court is forced by the regulations. More specifically, the players of a team rotate clockwise by one zone when they win a rally that the opponent team served. Therefore, in any given rally in a game, the six players of a team are lining up in a specific order due to the rotation. Each specific position, the team's players take during the rotation, will be called a Position Rotation (PR). Almost all high-level teams are using the 5-1 system and so they have the same players, from the point of view of players' ingame roles, in the same order of rotation. Hence, PR can be fully described by the setter's position. The actions of volleyball cannot be performed without restraints because there are limitations regarding the zone of the player due to PR. Consequently, the specification of every player affects the line-up of the team.

The coach of a team is responsible for the proper organization and function of his/her team. He/shehas to fulfil a series of tasks both before and during the game. The rally point system and the point limitations of the sets caused a decrease in the total amount of rallies of a game thus the coaches' starting line-up declaration is even more significant. Small changes in the order of rotation can improve point productivity.

More particular, the selection of the starting rotation (SR) of the team and the relative position of the players according to setter (S) is an important process for every coach andit is called Starting Line-up.Volleyball has more than one player per positional status (i.e., two outside hitters and two middle blockers). In addition, there are game scenarios where inter-player positional variability may be of greater interest, such as critical game moments, which correspond to instants that may change the state of the game (such as unbalances in score) at specific intervals of time of the game, and that have a greater impact on the outcome and the final action of the player and the game. Which outside hitter (OH) and middle blocker (MB) start near the S is animportant decision for every coach.



From a technical point of view, the players' abilities in basic volleyball skills are the main parameters in the coach's decision.

For example, the OH starts near the S called OH1and receives the opponent's serve twotimes at the middle laneof the court and theoretically, should be a better receiver than OH2 who receives one time at the middle part of the court and fourtimes at the left lane. For the positiosnal status of MB, important parameters are the ability to move and the ability to approach the net. For example,MB who starts near setter (MB1) approachestwo times(rotations R4 and R5) the attack position from the left lane of the court and should be better than the MB2, having a long path to threat for an attack.



Considering that volleyball actions are performed in a specific order forming a chain of events and affecting one another, it is logical to assume that valuable conclusions will also arise by the evaluation of the chains as a whole.

From a tactical standpoint, all coaches are looking at the possibility of playing strong rotations more often, whether that means a strong reception/attackformation or a strong serve/block formation.

But this can only be done effectively in conjunction with the opposing team's Starting Line-up. A strong reception/attacksetup may not have the expected results when facing the opposing team's strong serve/block setup, or vice versa.

Each team takes consequently six different PR in the court while trying to win every rally. Since there are always two teams competing against each other, there are 36 different possible combinations of the CR that can be found in a set. The right to serve in volleyball is fundamental since the team that receives the ball is more likely to win the point. The decision of the two coaches about the starting rotation of their teams leaves only 6 specific combinations of rotations that will occur in each set.The specific combination of the twoLine-ups is called Match-up.There are six (6) possible Match-ups. Whena coach would like to identify the Match-up of his/her team in a specific set, he/she can use the table below for the serving team.

MO	Same rotation with the opponentteam (e.g.R1 vs R1)
M-1	One rotation prior to the opponent (e.g R1 vs R6)
M-2	Two rotations prior to the opponent (e.gR1 vs R5)
M#	Three roatationprior to or three rotations ahead ofthe opponent (e.gR1 vs R4)
M+2	Two rotations ahead of the opponent(e.g R1 vs R3)
M+1	One rotation ahead of the opponent (e.g R1 vs R6)

In each set, a specific Match-up is played by both teams. To change the Match-up within a set, setter-opposite vice versasubstitutions must be made.Each Match-up divided in twelve episodes as these come from rotating teams. In high-level men's volleyball, each Match-up is played over 2.5 times in a typical set. In girls' development leagues, each Match-up is played 1.5 times or less and this makes it even more imperative for the coach to study the Line-up and the possible Match-up, because every "stuck" in rotation brings closer the defeat.

In addition, every specific match-up corresponds to individual matchups of players. For example in M0,MB1 faced three times against MB1 of the opposing team, and MB2 faced three times against MB2 of the opponent.

A team has an advantage if all rotations are of equal effectiveness. The coach can choose any rotation as an SR by checking the Match-up with the opponent. If he/she also knows the habits of the opposing coach (in which rotation he/she chooses as an SR) he/she can work out a match scenario that will lead him to victory by "locking" a certain Match-up for the set.

In any case, the coach at the start of each set needs to recognize the resulting Match-up and immediately give the appropriate instructions.

Below are the 6 match episodes for Olympiakos with service possession, in Match-up M0, played in three of the 5 sets of the third final Olympiakos-PAOK in the 2016-17 VolleyLeague Championship.



Very helpful for the coach are the Match-ups of players in block and serve (see below) giving a glanceat the picture of the opponents and the possibility for the coach to give instructions at the beginning of each set.

Block								Serve to		
Cupcv	->	2 vs	Strvc	front,	, 1 vs	Strvc	back	Stvxt	to	R1
Kknks	->	2 vs	Strvc	back,	1 VS	Sfrnv		Kknks	to	<b>R6</b>
Costa	->	3 vs	Tkrds					Costa	to	R5
Duff	->	3 vs	Andrd					Agmez	to	R4
Stvxt	->	2 vs	Sfrnv	1 vs	Dante			Cupcv	to	R3
Agmez	->	2 vs	Dante	1 vs	Strvc			Duff	to	R2

There are all 6 match-ups for Olympiakos in reception as well as the corresponding individual Match-ups in reception and attack, which complete the picture for Match-up: M0. They are not listed here for reasons of c.

Every coach needs to be able to assess the potential of each rotation for both his/her team and the opposition so that he can then create a 'virtual game' of Match-ups. This evaluation can be done either with the existence of data resulting from registration, or (usually) without data.

Without data, special attention may be given to the individual Matchups of the set in order to provide the appropriate answers to questions or tasks such as:

• Who blocks the best attacker of the opponents?

• Protect short setter (if) by facing weaker attackers of the opponents?

- Mismacth creation for our best attacker?
- Hard servers vs weaker receiving formations of the opponent?
- Assistant to our MB vs the opponent MB
- Protection of the weaker receiver of our team
- How many times does the weaker CR our team will play?

Finally, dataavailability gives significant help to the coach, since comparison tables are produced for each Match-up. Especially in cases of matches against the same opponent, the comparisons from measurements of previous matches produce match scenarios and in any case, give valuable information about the possible development of the next match.

► The text is a seminar presentation by S. Drikos and contains excerpts from the book by P. Kountouris - S. Drikos "Analysis and interpretation of Competitive Performance in Volleyball")

▶ The tables/graphs in the text come from the Software MatchupEpilysis.