

## **Game-point tactics and training strategy for world-level competitions: what we can learn from the London 2012 Olympic Table Tennis Games**

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**Abstract:** similar to a tight basketball or baseball game in late/extra minutes or innings, table tennis competitions often reach a tight late-game situation (score 9-9 and after) of each game in world-level matches. In this study, we first analyzed the matches played in the London 2012 Olympic Games to derive the percentage of games entering the tight late-game situation under different categories of the game margin (4:0, 4:1, 4:2, and 4:3; an indicator of the skill differential between the athletes) and genders. The result reveals the frequency and importance of having game-point tactics and training strategy to prepare for world-level competitions. We then used team China as the study target to describe the preparation logics and the methods employed in their pre-Olympic training camp. Interviews and literature review were both used to collect information about the training content and intensity. At the end, coaching suggestions will be discussed in this study about maneuvers of different score situations to execute the designed services and strokes based on the scouting report to create technical and mental advantages over opponents.

**Keywords:** coaching, Olympic Games, tactics, training strategy.

### **1. INTRODUCTION**

Entering the 11-point era of the scoring system, each game of a table tennis match can be divided into three different phases with the points at 0-4 (early), 5-8 (middle), and 9-and-after (late) to finish a game. Although every point is equally important to win a match, the scores at the three different phases influence players' thinking, mental condition, and the subsequent performance of each game [1-3]. For example, at the early and middle phases of the first and second games, players tend to probe the opponent using different services and spin directions to get familiar with the return and stroke styles as well as the employed strategies from the opponent. After a few rounds of try-and-error, information is then collected to formulate appropriate strategies for the late-game situation (score 9-9 and after), if needed. At the end of each game, because there is little margin for errors, preparation for the late-game situation holds the key to gain mental and

technical advantages over the opponent in a tight competition.

To strengthen the advantage of team China's athletes, the Chinese table tennis training camp had previously targeted the London 2012 Olympic Games to establish a series of training methods based on opponents' scouting reports to prepare for the event. To collect information, the analytical department of the Chinese training camp applied both statistical and video analyses of the opponents to create detailed data about the tendency and the strength-weakness analysis with different match-ups for the training camp coaches to prepare for situations at the different phases of the game, particularly the late-game situations [4-5]. The purpose is to help athletes make quick game-time decisions in response to opponents' playing styles, as well as to help coaches identify opponents' patterns and strategies (if not following the pattern) to provide athletes immediate suggestions for in-game adjustment.

In this report, we will first analyze the matches played

in the London 2012 Olympic Games to derive the percentage of games entering the tight late-game situation under different categories of the game margin and genders. This is to reveal the importance and emphasize that the coaches should pay extra attention to prepare for the late-game situations in world-level competition. We will next describe the preparation logics and the methods employed in team China's pre-Olympic training camp. Finally, coaching suggestions will be discussed in this study about maneuvers of different score situations to execute the designed services and strokes based on the scouting report to create technical and mental advantages over opponents.

## 2. METHODS

The tables were derived from the score data listed in the official website of London 2012 Olympic Games <http://www.london2012.com/table-tennis>. In addition, this paper used documentary study and a review and report writing style to include information from the Chinese national table tennis pre-Olympic training program (2010-2012). Individual contacts and interviews were used to make possible of integrating the opinions about how to combine practice with the in-game strategies and the adjustment to prepare for the late-game situations against the international athletes.

## 3. RESULTS

Table 1 shows the 2012 Olympic table tennis games that entered the tight late-game situation in men's singles. The game margins -- 4:0, 4:1, 4:2, and 4:3 -- were used as the indicator of the skill differential between the athletes. As can be seen, except the game margin at 4:0, which indicates a substantial skill gap between players, close to 40% of the games reached score 9-9 and after.

Similarly, Table 2 shows that in women's singles close to 40% of the games reached score 9-9 and after when the game margins were at 4:2 and 4:3. The result

indicates that preparation of the late -game situation was crucial for winning tight competitions in both genders.

In men's and women's team competitions, five-game matches were played instead of the seven-game match format used in the singles. Tables 3 and 4 show that except the game margin at 3:0, in both the men's and women's team competitions, >30% of the games reached score 9-9 and after when the game margins were at 3:1 and 3:2. Reaching a tight late-game situation was most frequent for women's team competition (as high as 48%) when the game margin was at 3:2.

Table 1 Men's singles, tournament statistics of 2012

Olympic Games				
Game margin	4:0	4:1	4:2	4:3
Matches total	22	21	11	15
Games total	88	105	66	105
Games reach score 9-9 and after	17	41	25	39
Frequency (%)	19%	<b>39%</b>	<b>38%</b>	<b>37%</b>

Table 2 Women's singles, tournament statistics of 2012

Olympic Games				
Game margin	4:0	4:1	4:2	4:3
Matches total	20	21	17	12
Games total	80	105	102	84
Games reach score 9-9 and after	15	27	38	34
Frequency (%)	19%	26%	<b>37%</b>	<b>40%</b>

Table 3 Men's team, tournament statistics of 2012

Olympic Games			
Game margin	3:0	3:1	3:2
Matches total	27	24	6
Games total	81	96	30
Games reach score 9-9 and after	20	31	9
Frequency (%)	25%	<b>32%</b>	<b>30%</b>

Table 4 Women's team, tournament statistics of 2012

Olympic Games			
Game margin	3:0	3:1	3:2
Matches total	30	15	5
Games total	90	60	25
Games reach score 9-9 and after	15	18	12
Frequency (%)	17%	<b>30%</b>	<b>48%</b>

#### 4. DISCUSSION

A critical component in guiding team China's preparation for the 2012 Olympic table tennis games was to analyze the skills, tactics, and tendency of their major opponents in this world-level event. The reports of different athletes were collected from videos that were available on-line or recorded by scouts in the major ITTF tournaments. Software-based analysis of the shot locations and stroke combinations were used to breakdown each player's tendency. In the process, any unique technical strengths and patterns were highlighted in the analysis for the coaches and athletes to guide their training program [6].

Note that the content of the training program was set at the beginning of team China's close-door training camp on the basis of the scouting reports. This is to strengthen the mental advantage of the Chinese athletes by understanding that they have prepared for the different situations, particularly the late-game situations, to help stabilize the mental conditions in a nervous

environment. The information guided training program was effective for players to get familiar with the opponents, but required an experienced scouting and coaching department to provide the analytical service, comments, and suggestions.

As the director of team China's sport laboratory (Hui Zhang) indicated: "Regarding the late-game situation, our coaches and athletes had read numerous scouting reports prepared by us to breakdown opponents' tendency and stroke patterns. For example, we made 73 reports for the men's competitions between 2011 and 2012. For gold medalist Jike Zhang alone, we made 67 reports to help him understand opponents' strength, weakness, and patterns and how he should use his skills in the competition." Hui Zhang later concluded that the information provided by the scouting department played a key role in Jike Zhang's recent success at the world-level table tennis competitions [7-8].

In competition, the coaches need to monitor whether the opponent falls into the tendency and patterns in the scouting report. If not, advices for in-game adjustment need to be formulated in time to help athlete understand the change of the game plan. The opponent's tendency and patterns can be probed at the beginning phases of each game by designed services and return services of different spins and locations.

Once the competition reaches a late-game situation, the player needs to combine the scouting report with the in-game information to decide the services and/or return services for winning the game. A quick, decisive response at this moment constitutes the foundation of winning a tight match.

#### 5. CONCLUSION

First, athletes should practice on and get familiar with the scores of 7:8, 8:8, 9:9, 9:10, and 10:10 and afterward. The different types of services and the service returns, including the spins and locations, should all be prepared

against different opponents. Training should include both the winning and deficit sides of the scores to mimic all conditions that could happen in the competition. Once the players are familiar with the late-game situations, their response time in decision making and the control and quality of their strokes will become faster and better in comparison with those derived from the improvised reactions.

Second, coaches of national teams need to collect, analyze, and categorize the skills, tendencies, and strategies used by the world-level athletes. Coaches need to follow the patterns or recognize the change of patterns in services and strokes to help athletes understand their opponent. This is particularly important at the late-game situation, in which athletes are under pressure and might not fully recognize opponent's change of strategies. Calling timeout can be used to help communication between the player and coach to execute in-game adjustments, if necessary.

Finally, in preparation of important world-level tournament like Olympics, new services, stroke combinations, and shot locations need to be created in the training camp to strategically avoid predictable patterns that have previously been applied. This is particularly important in training for the late-game situations, in which the coaches and players should focus on creating various combinations of the first three strokes. Athletes should always carry a "surprise" element in the late-game situation against the high-ranking opponents by changing the combinations and being creative to take the crucial final two points.

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