

Competitive Activity of the Best Table Tennis Players

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Introduction

Over the years experts have begun to take an interest in the study of competitive activity, that is, athlete's performance in different kinds of sports (1,2,3,4). This occurred because the study of the competitive activity of athletes and determination of the relation between the training process and competition results are the main trends of optimizing training processes. Additionally, it is because the analyses of competitive activity enables us to determine the causes of point losing or winning.

The classification of sports suggested by J.Mitchell, C. Blomqvist et al.(5) looks only at the physiological side of table tennis. We suggest classifying tennis as a non-contact playing single combat and investigating competitive activity and all its components through the prism of two fighting sides. This point of view enables us to find out the trends of further qualification improvement trends of modern table tennis play.

Method

The analysis of the competitive activity of elite table tennis players was provided via video tape-recording, special stenographic writing which enabled us to register all playing movements of the player. The chronometry was provided using a stop-watch.

Such analyses were provided during the open championships of European countries (1984 - 1990) and the 1984 European championship. The analyses included studying Soviet elite players, as well as foreign (male and female) players. In all 458 males and 345 female singles games were analysed.

Results

The chronometry of competitive activity of elite table tennis players enabled us to determine their regimes (Table 1). The range of this data is very variable. Thus the shortest total playing time for women was measured during the match between Antonyan(SU) - Polk (ChSFR) with a set lasting 2 min. For men it was the match between Secretin (Fr) - Jonyer (Hun) with a set lasting 5 min. 30 sec. The longest set for women was registered between Bulatova (SU) - Hrachova (Ch) - 24 min. 35 sec. and between Jonyer (Hun) - Birashow (Fr) for men - 17 min. 28 sec. But this was not the limit. That is why this data was selected according to the playing style of the athlete.

This data shows that a game style has significant influence on one's competitive activity. Besides, we found out that pause time (picking up the ball, wiping with the towel, preparing for the next point draw) took about 3/4 of total game time, effectively reducing the entertaining effect of the game at such a short point draw.

Our observations performed during the Moscow International tournament (Novem-

ber 1990) where new game rules were used (game until eleven score and changing service after every point draw) showed that this innovation did not increase game entertainment. The average total time for a set is equal to 13 min. 24 sec., although net time for a set has grown shorter to 73 sec., whilst the pause time has grown significantly longer— up to 9 min. 24 sec. This is closely associated with several factors: 1) psychological tension of the game and growth value of every point; 2) frequent change of ball service requires preparation time from players.

The knowledge of elite table tennis players competitive activity enables us to stimulate competition loads and to outline the path of how to increase game entertainment. We suppose the pause reduction between point draw and point draw duration increasing to be the main means of game entertainment and attraction growth.

The number of technical–tactical modes performed in a set is a very useful characteristic of the game. It can serve as an efficiency and stability index of technical–tactical actions and reflect game style and tactics.

The results of observations enable us to classify the players into three groups by the number of technical and tactical actions performed in one set:

quick set draw :	males –	up to 80 strokes
	females –	up to 100 strokes
gradual set draw :	males –	80–100 strokes
	females –	100–200 strokes
prolonged set draw:	males –	above 100 strokes
	females –	above 200 strokes

The difference between the groups is significant both in males and females ($P < 0.001$).

The players can be divided into three groups by the duration of game interaction in dependence of game stroke number in attack preparation and completion (Fig.1): quick, gradual and prolonged point draws. Tactic and game style choice, as our investigations revealed, is closely connected with psycho–physiological peculiarities of a table tennis player's personality such as strength and mobility of excitement and inhibition; temperament; the volume and stability of attention; operativeness of cognition; speed reaction.

As a result of fitness level control studies in elite table tennis players we developed a specially formalized system for recording of players' competitive activity. We approved and put some quantitative indices of competitive activity into coaches' practice. Among them are:

- the volume of the game actions – the total number of technical modes;
- the versatility – the percentage relationship between the determined technical mode number and total number of technical modes used in the game;
- efficiency of technical–tactical modes, determined as a percentage relationship between the number of points won, using determined mode, and the total number of this mode utilization;
- the index of technical–tactical action reliability – the percentage relationship between number of determined non–lost and won stroke modes and total number of these stroke modes in a set or game;
- the efficiency of the game under the player's and his opponents services;
- the score plot enabling us to determine psychological stability of the player.

Special computer programs of competitive activity can build "player game profile", enabling one to determine her/his game tactics, his strong and weak peculiarities in the game, to evaluate his fitness level and to help the coach and the player to choose the most efficient and reliable variants of the game with one or another adversary and to improve technical–tactical preparation of the table tennis player.

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