201 - SPEED ABILITIES AND PERFORMANCE OF A FOOTBALL PLAYER

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The importance of speed abilities for a football player

Pavel Nedvěd, the football player of 2003, Juventus Torino:
"Football is increasingly faster. In order to win a match, one has to outrun and surprise the rival. The future in football belongs to players, who are very fast and the ball does not make them problems."

Constantly increasing demands on individual speed abilities of players as well as on speed of collaboration (cooperation) of players can unambiguously be considered one of the main characteristics of the contemporary professional football.

Football is played very fast on the international forum. It is played in a simple way – two touches with all players in constant movement. The game has incredibly sped up; it has become more aggressive and more demanding regarding physical condition.

The worldwide developmental tendency in football is the increase in dynamics of the game, which in turn increases requirements on speed abilities of players during matches. The 2002 FIFA World Cup in South Korea and Japan is a clear proof of this. Individual expressions of speed abilities of many great football players were on high level and were dominated by the speed of controlling the ball in individual penetrations. Mainly the game style of South Korea and China had an extraordinary acceptance in this sense.

Speed abilities represent one of the most important components of motor potential. World's best players not only possess excellent technical-tactical abilities, they also have exceptionally developed speed abilities (Ronaldo, Shevchenko, Henry, etc.).

The issue of speed abilities in today's football is very up-to-date and inevitable as far as successful preparation of players is concerned.

Slow players have difficulties changing the rhythm of movement and dynamics of running; they are slow when moving in space which is subsequently mirrored in the play of the whole team. The dynamics of the game is therefore slow, boring and not very attractive for spectators. Successfulness in personal duels, which to a large degree decides about wins in matches, is very low.

In order to improve this unsatisfactory condition, it is necessary to bring up new players, **a new generation of players,** since long-term and purposeful work in everyday training process is needed for the development of speed abilities.

In the last few years there has also been a shift in the understanding of speed abilities, while their complexity is thoroughly is respected.

Football belongs among sports, which requires the highest possible level of all kinds of speed abilities in changing game situations. It is the requirement of the overall speed performance of players, i.e. the speed of their moving in space (on the field).

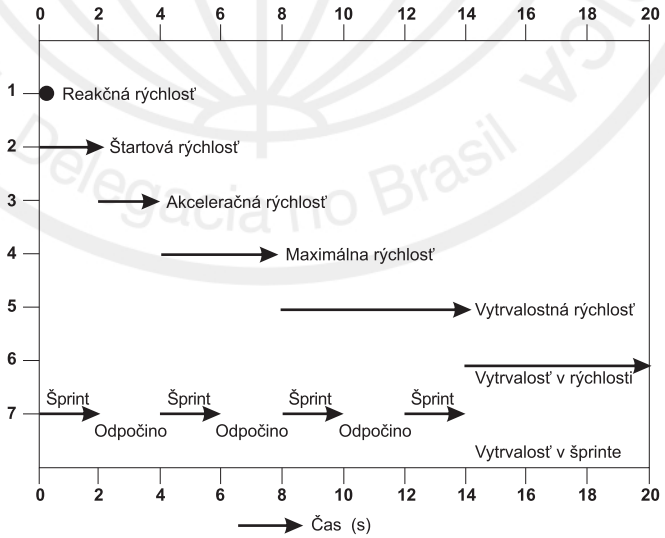

Figure 1 Various kinds of speed abilities

Reaction speed, Starting speed, Acceleration speed, Maximum speed, Endurance speed; Endurance in speed; Sprint, Relief, Endurance in sprint

The quality of individual kinds of speed abilities has cardinal importance on performance of players in a football match. It enables players to:

1. quickly accept, process and evaluate information in order to optimally solve game situations,

2. decide for an effective action in the shortest possible time,
3. react quickly to surprising activities of the ball, teammates and opponents,
4. perform cyclic and acyclic movements with maximum speed,
5. perform individual activities with the ball in the fastest possible speed,
6. act in the fastest and most effective possible way during matches in cooperation with teammates using technical-tactical abilities.

We can talk about complexly developed speed only at the optimal level of individual kinds of speed abilities. However, in development of speed abilities we have to deal with all kinds because individual types are relatively independent of each other.

Expressions of speed abilities in football can be divided into the following **forms**:
- speed of reaction,
- speed of locomotion,
- speed of performing game activities of individuals,
- speed of players' cooperation.

Game forms of speed abilities are regarded by many experts as the "decisive factor" of successfulness of individual players and the whole team. They represent a complex view of footballer's speed during the game. They are relatively independent of each other, while particular forms represent a natural basis for each other and we can evaluate them objectively. The conception of game forms of speed abilities in football were processed in our country in the 70-ties by Korček.

Reaction speed

- is one of decisive factors for successful solution of dangerous game situations. It is important for goalkeepers as well as players in the field.

Reaction speed includes:
- speed of perception,
- speed of anticipation,
- speed of making decisions and its
  - preparation phase,
  - latent phase,
  - implementation phase.

In order to evaluate reaction and reaction-speed abilities, several methods were applied in practice, including those of Měkota-Blahuš (1983), Štulrajter (1989), Hamar (1997).

One diagnosis of disjunctive reaction-speed abilities of legs represents an agility test elaborated by the Institute of Sport Science at the Faculty of Physical Education and Sport, Comenius University in Bratislava, which is also suitable for individual sports games.

We utilized this test for evaluation of the current state of reaction-speed abilities of players from the team of FK Rapid Bratislava in the 1st football league of older juniors.

The resulting average value of the set was 361.7 ms and the resulting average value of goalkeepers was 300.7 ms.

We have been applying the agility test since 2002 also when diagnosing youth representation football teams.

Table 1: The level of disjunctive reaction-speed abilities in some select sports (Zemková, Hamar, 1999)

Sport	Time (ms)	Our set
Fencing	336.6	
Ice-hockey	339.4	
Football	**364.0**	**361.7**
Basketball	369.3	
Volleyball	370.6	
Wrestling	497.6	

Locomotive speed

- represents the following kinds of speed:
  - starting,
  - frequency, and
  - maximum.

The locomotive speed means fast moving of players in the field at various distances required by the game; the speed is often connected with a change of direction.

Runs with maximum intensity represent the most demanding forms of players' movements and form only small part of the total playing time. Runs with maximum intensity pointed at biggest shortcomings of our footballers.

Table 2: Numbers of sections run with maximum intensity (defenders)

Defender	1 - 5 m	5 - 10 m	10 - 20 m	20 m +	Number	Total
Slovakia M.C.	4	8	11	3	25	333 m
Slovakia R.K.	5	12	11	2	30	387 m
Netherlands	83	47	18	14	162	1,400 m

Table 3: Numbers of sections run with maximum intensity (midfield players)

Midfield player	1 - 5 m	5 - 10 m	10 - 20 m	20 m +	Number	Total
Netherlands	70	31	11	9	127	1,100 m
Slovakia P.S.	5-7	16-29	16-23	4-8	45-53	560-611 m
Slovakia I.H.	2-6	10-19	16-19	4	43-46	465-515 m
Slovakia M.K.	3-5	9-14	9-14	5-6	38-40	438-478 m

We evaluated the starting (acceleration) speed with a 10 m run, the complex locomotion speed with a 30 m run and a 30 m run with a change of direction. Forwards were best in the tests, followed by defenders and players of the midfield formation.

Table 4: Values of various kinds of speed abilities of players in the 1st football league of older juniors

No.	Player's	10 m		30 m	30 m run - slalom			Note
	name	run (s)	Rankings	run (s)	Rankings	without the ball	Rankings	
1.	M D	1,83	19th-20th	4,28	16th-17th	4,53	14th-15th	GK
2.	J P	1,83	19th-20th	4,21	13th	4,44	10th	Def.
3.	M K	1,73	8th-10th	4,1	7th-8th	4,53	14th-15th	Def.
4.	P Š	1,71	4th-6th	4,02	4th	4,29	1st-2nd	Def.
5.	J T	1,74	11th-12th	4,09	6th	4,43	9th	MP
6.	J N	1,71	4th-6th	3,95	1st	4,29	1st-2nd	MP
7.	T K	1,8	18th	4,27	15th	4,48	12th-13th	MP
8.	M Š	1,72	7th	4,13	10th	4,3	3rd	MP
9.	I Z	1,78	15th	4,38	19th	4,45	11th	MP
10.	S Š	1,87	21st	4,28	16th-17th	4,8	21st	MP
11.	L K	1,68	2nd	4,01	3rd	4,35	6th-7th	F
12.	M Š	1,66	1st	3,98	2nd	4,34	5th	F
13.	M G	1,79	16th-17th	4,42	21st	4,68	20th	MP
14.	M K	1,73	8th-10th	4,35	14th	4,35	6th-7th	MP
15.	T J	1,76	14th	4,2	12th	4,59	16th	Def.
16.	¼ M	1,73	8th-10th	4,1	7th-8th	4,48	12th-13th	Def.
17.	D T	1,79	16th-17th	4,37	18th	4,61	18th	Def.
18.	V M	1,75	13th	4,41	20th	4,63	19th	F
19.	M K	1,71	4th-6th	4,18	11th	4,31	4th	Def.
20.	B A	1,74	11th-12th	4,11	9th	4,6	17th	MP
21.	F B	1,92	22nd	4,5	22nd	4,96	22nd	GK
22.	L K	1,7	3rd	4,03	5th	4,39	8th	F

Speed of game activities of individuals

One of the main characteristics of contemporary football is:

- **perfect control over the ball in fast movement** (it enables players to focus all attention and energy to implementation of surprising game activities).

Getting the ball under control under time and space pressure has extraordinary significance in matches.

To a large degree speed becomes a necessary part of players' performance and their locomotive readiness. Speed in activities with the ball is mainly based on **coordination-technical components:**

- perfect control of one's own body movements – purposefulness,
- soft and accurate ball control – feeling of the ball.

In the development of game activities of individuals we prefer three aspects:

a) to develop gradually speed of implementation of game activities of individuals (fast movement with the ball, working out the ball from a pass, etc.),

b) to implement typical elements accelerating the game (headers, first-touch passes, etc.)

c) to connect more quickly particular game activities of individuals into chains.

We consider controlling the ball with fast movement one of the best managed activities of players. In order to evaluate special motor and technical readiness of players, we usually use a test – moving with the ball in slalom. Our measuring confirmed that the most advantageous speed for players with the ball in slalom is the optimum speed.

The optimum speed means performing game activities of individuals (in this case moving with the ball) with such intensity in which the technical side of the game activity is not affected (that is correctness, accuracy, economic character, effectiveness, etc.) by the speed of performance itself.

Table 5: Values of various kinds of speed abilities of players in the 1st football league of older juniors

No.	Player's	30m run - slalom		30m run - slalom		Note
	name	without the ball	Rankings	with the ball	Rankings	
1.	M D	4,53	14th-15th	8,38	21st	GK
2.	J P	4,44	10th	6,76	10th	Def.
3.	M K	4,53	14th-15th	6,08	2nd	Def.
4.	P Š	4,29	1st-2nd	6,54	6th	Def.
5.	J T	4,43	9th	6,34	4th	MP
6.	J N	4,29	1st-2nd	6,63	7th	MP
7.	T K	4,48	12th-13th	6,09	3rd	MP
8.	M Š	4,3	3rd	6,36	5th	MP

9.	I Z	4,45	11th	6,95	15th	MP
10.	S Š	4,8	21st	7,12	18th	MP
11.	L K	4,35	6th-7th	6,67	8th	F
12.	M Š	4,34	5th	6,85	12th	F
13.	M G	4,68	20th	7,9	20th	MP
14.	M K	4,35	6th-7th	6	1st	MP
15.	T J	4,59	16th	7,23	19th	Def.
16.	¼ M	4,48	12th-13th	6,7	9th	Def.
17.	D T	4,61	18th	7,09	17th	Def.
18.	V M	4,63	19th	6,9	13th-14th	F
19.	M K	4,31	4th	6,9	13th-14th	Def.
20.	B A	4,6	17th	6,97	16th	MP
21.	F B	4,96	22nd	8,81	22nd	GK
22.	L K	4,39	8th	7,3	11th	F

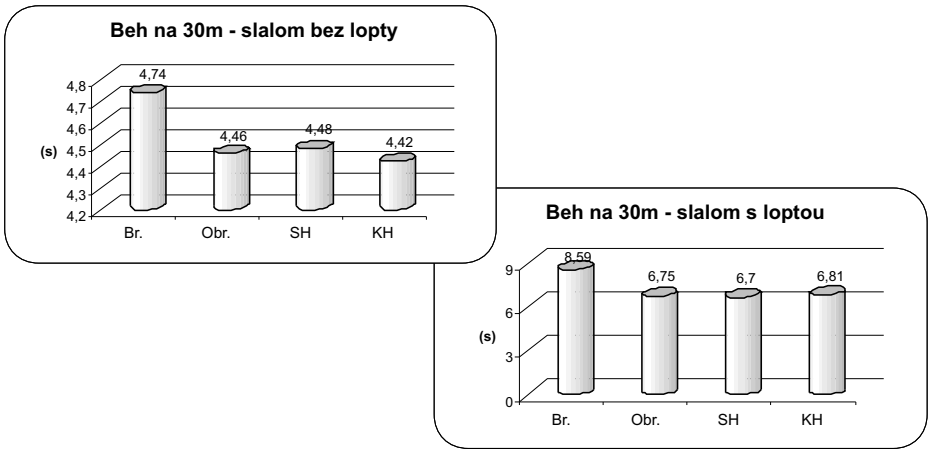

Figure 2: Average values in a 30 m run without and with ball by players' positions (s)
30 m run – slalom without the ball, 30 m run – slalom with the ball
Br. – GK; Obr. – Def.; SH – MP; KH – F

The speed of players' collaboration
- is a game form, which expresses speed abilities exceeding the frame of one "entity" – football player,
- has a cooperation character,
- a development presumption is first of all perfect mastering of particular game activities of individuals and their partners.

In general we can talk about **two basic factors:**
1. good timing of footballer's activity with regard to the game situation,
2. optimum time, space and mind synchronization in collaboration with other football players.

The speed of collaboration of players is synchronization and integration of thoughts, and cooperation of activities of particular football players within running game situations.

The speed of collaboration of players represents fast cooperation of players.
Fast cooperation – combination is the basis for successful implementation of fast counterattacks, or for overcoming opponent's defensive.
Fast cooperation is the top level of players' art of a group of players or a team.