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## Modern Trends in Finish of Offensive Actions in Men's Floorball



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**Keywords:** floorball, offensive actions, shots and strikes, efficiency, accuracy, competitive activity.

**Introduction.** Floorball is one of young and rapidly developing in the world team sports. The floorball play activity has its own features and characteristics [1, 2, 6]. The study of competitive activity is a part of comprehensive pedagogical control. Objective information on the degree of realization of athletes' capabilities in a floorball competition is a necessary condition for management of the training process.

**The purpose of the research** was to determine the offensive potential in the final round of the 2012 Men's World Floorball Championship.

**Results and discussion.** 43 matches were held in the final round of the 2012 World Championship in Switzerland among the top 16 men's national teams: 24 matches in the group round and 19 - in the play-off round (Table 1). Effectiveness of matches in the preliminary and in the final stages of the tournament was  $15.7 \pm 8.1$  and  $10.7 \pm 4$  goals per game, respectively. 5031 strikes and shots on goal or an average of 117 final offensive actions per game were performed in just 43 games, 582 goals were scored, with the overall rate of their performance being 11.56%. It describes floorball as a game with a big number of goals scored in matches and their staginess, which is important for audience and fans.

**Table 1.** Features of the matches of the final round of the 2012 Men's World Floorball Championship among national teams

Teams	Number of games	Number of matches in the group round		Play-off matches		Shots and strikes	Effectiveness of matches
Men's national teams	43	24		19		5031 OER = 11.56% 582 goals	$15.7 \pm 8.1$ – GR
		Stand-off	1	p.s.	2		$10.7 \pm 4$ – PO
		Win	23	s.d.	2		Overall at the tournament $13.53 \pm 7$

*Note.* Here and in Table 2: p.s. – matches that ended with a series of postgame penalty shoot-out; s.d. – matches that ended by one team winning during the regular ("sudden death" principle); GR – group round; PO – play-off; OER – overall effectiveness rate.

378 goals were scored in the group round of the final round of the 2012 World Championship, 204 were scored during play-off (Table 2). The second interval was the most important part of the match at all the rounds of the tournaments, it was during the second "20 minute interval" when most of the goals were scored. It should be noted that 4 out of 19 matches of the final round did not finish within the regulation

time: two matches required overtime, and two winners were identified during the series of postgame penalty shoot-outs.

**Table 2.** Percentage ratio of goals in the matches of the final round of 2012 World Championship by game intervals

Teams	Rounds	Total number of goals	1 <sup>st</sup> interval	2 <sup>nd</sup> interval	3 <sup>rd</sup> interval	s.d.	p.s.
Men's national teams	Group	378	126	130	122	-	-
		100 %	<b>33.3</b>	34.4	32.3	-	-
	Play-off	204	64	72	64	2	2
		100 %	31.4	35.3	31.4	0.95	0.95
	At the tournament	582	190	202	186	2	2
		100 %	32.6	34.7	31.9	0.4	0.4

Note. s.d. – matches that ended by one team winning during the regular overtime (“sudden death” principle), p.s. – matches that ended by a victory in a series of postgame penalty shoot-outs.

It is interesting to analyze match time intervals which are most effective in terms of goals scored. Each period was divided into four 5 minute parts (Table 3). The most effective parts of the match were 25<sup>th</sup>-30<sup>th</sup> and 55<sup>th</sup> – 60<sup>th</sup> minutes of the game.

**Table 3.** Number of goals in the matches of the final round of 2012 World Championship depending on the interval and the time of the match

Round	1 <sup>st</sup> interval				2 <sup>nd</sup> interval				3 <sup>rd</sup> interval				OT	PGFT
GR	24	36	30	36	24	37	37	32	22	33	23	44		
PO	12	18	17	17	11	28	15	18	18	14	14	18	2	2
Minutes of the game	1 <sup>st</sup> –5 <sup>th</sup>	5 <sup>th</sup> –10 <sup>th</sup>	10 <sup>th</sup> –15 <sup>th</sup>	15 <sup>th</sup> –20 <sup>th</sup>	20 <sup>th</sup> –25 <sup>th</sup>	25 <sup>th</sup> –30 <sup>th</sup>	30 <sup>th</sup> –35 <sup>th</sup>	35 <sup>th</sup> –40 <sup>th</sup>	40 <sup>th</sup> –45 <sup>th</sup>	45 <sup>th</sup> –50 <sup>th</sup>	50 <sup>th</sup> –55 <sup>th</sup>	55 <sup>th</sup> –60 <sup>th</sup>	60 <sup>th</sup> –70 <sup>th</sup>	-

Note. OT – overtime; P – postgame penalty shoot-out; GR – group round; PO – play-off.

Game analysis showed that 83.7% of all the goals are scored at even strength games, when teams play in set offense or counterattack the opponent's goal, 16 goals, or 2.7 %, scored were set-piece, 9.9 % – when the teams were numerically superior to the opponent (Table 4). Zone B is the most effective offensive zone (59.4 % of all the goals) [4]. Depending on the player's position most of the goals (60.5 %) are scored by flankers. It should be noted that backs score 16.8 % of all the goals – indicating the importance of the participation of backs in the teams' offensive actions.

**Table 4.** *Characteristics of effective offensive actions in the matches of the final round of the 2012 Men's World Floorball Championship*

No	Indicators	Studied situations	Number of scored goals	Ratio, %
1	Depending on the structure of offensive actions	1. Attacking play	487	83.7
		2. Set pieces	16	2.7
		3. Having numerical superiority	58	9.9
		4. Having numerical inferiority	8	1.4
		5. Penalty shoot-out	5	0.9
		6. Scoring into own goal	8	1.4
2	Depending on offensive zone	1. Zone A	43	7.4
		2. Zone B	346	59.4
		3. Zone C	55	9.5
		4. Zone D	35	6
		5. Zone E	75	12.9
		6. Zone F	28	4.8
3	Depending on the role of the player	1. Flanker	352	60.5
		2. Center forward	122	21
		3. Back	98	16.8
		4. Own goal + PPS	10	1.7
4	Depending on implementation technique	1. Straight shot or strike	514	88.3
		2. Dodging the goal-keeper	36	6.2
		3. After a follow-up	24	4.1
		4. Own goal	8	1.4
Number of scored goals			582	100

In the games of the leading national teams of the world that took the first four places in the 2012 World Championship the following characteristics of completion of attack of the opponent's goal were revealed (Table 5). The average number of shots and strikes ranged from 56 to 116 per game depending on the class of the competing teams, the accuracy rate (or the number of effective shots that reached the goal mouth) was 37.8 % in the matches with the top four teams and about 50% in the matches with the national teams that were number 5 and below. We believe it is interesting to look at the effectiveness rate parameters of shots and strikes on the opponent's goal that were obtained as a result of our research: overall effectiveness rate ranged from 9.8 to 25.1 %, effectiveness rate of all shots on target – from 25.9 to 48 %. If we compare these figures with the data of the 2010 World Championship [3], we can see a clear tendency to increase of the effectiveness of the final shots and strikes.

**Table 5.** Parameters of games of men's national floorball teams (Sweden, Finland, Switzerland, Germany) which took 1-4 places at the 2012 World Championship.

No	Parameters	1 <sup>st</sup> – 4 <sup>th</sup> places		5 <sup>th</sup> – 8 <sup>th</sup> places		9 <sup>th</sup> – 12 <sup>th</sup> places		13 <sup>th</sup> – 16 <sup>th</sup> places	
1	Number of games	5		6		4		4	
2	Total number of goals	55		52		48		107	
3	Average number of goals	5.5±4.7		8.7±5.3		12±5.4		26.75±11.4	
4	Total number of shots and strikes	560		320		298		427	
5	Average number of shots and strikes	56±24.5		53.3±19.1		74.5±27.8		106.75±30.5	
6	Balls cleared by goal-keepers	157	28*	111	34.7*	100	33.6*	116	27.2*
7	Balls taken by field players (blocked ones)	218	38.9*	79	24.7*	73	24.5*	80	18.7*
8	Wide shots	130	23.3*	78	24.4*	77	25.8*	124	29.0*
9	Number of scored goals	55	9.8*	52	16.2*	48	16.1*	107	25.1*
10	Accuracy rate (AR, %)	37.8		50.9		49.7		52.2	
11	Overall effectiveness rate (OER, %)	9.8		16.2		16.1		25.1	
12	Effectiveness rate of shots and strikes that reached the goal mouth (ERM, %)	25.9		31.9		32.4		48.0	

Note. Here and in tables 6-8: \* – percentage of the total amount.

In case of the next four teams the number of shots and strikes performed per game ranged from 40 in matches with the leading national teams of the 2012 World Championship to 101 in matches with the outsiders of the final round. Shots accuracy rate ranged from 38 to 44 % depending on the class of the opponent. With regards to the overall effectiveness of the final offensive actions and shots that reached the goal mouth, the teams which took 5-8 places have parameters that differ from those of the leaders of the world championship, which indicates a higher skill level of players of the leading national teams (Table 6).

**Table 6.** Parameters of games of men's national floorball teams (Norway, Latvia, the Czech Republic, Slovakia) which took 5-8 places at the 2012 World Championship.

№	Parameters	1 <sup>st</sup> – 4 <sup>th</sup> places		5 <sup>th</sup> – 8 <sup>th</sup> places		9 <sup>th</sup> – 12 <sup>th</sup> places		13 <sup>th</sup> – 16 <sup>th</sup> places	
1	Number of games	6		4		4		4	
2	Total number of goals	14		38		41		53	
3	Average number of goals	2.3±1.75		4.75±1.48		10.25±5.3		13.25±5.5	
4	Total number of shots and strikes	244		534		301		404	
5	Average number of shots and strikes	40.7±24.9		66.7±14.9		75.25±21.7		101±13.6	
6	Balls cleared by goal-keepers	82	33.6*	166	31.1*	92	30.6*	115	28.5*
7	Balls taken by field players (blocked ones)	85	34.8*	213	39.9*	85	28.2*	123	30.4*
8	Wide shots	63	25.8*	117	21.9*	83	27.6*	113	28.0*
9	Number of goals	14	5.8*	38	7.1*	41	13.6*	53	13.1*
10	Accuracy rate (AR, %)	39.3		38.2		44.2		41.6	
11	Overall effectiveness rate (OER, %)	5.7		7.1		13.6		13.1	
12	Effectiveness rate of shots and strikes that reached the goal mouth (ERM, %)	14.6		18.6		30.8		31.5	

Shot fitness parameters of the third quartet of teams including the Russian national team are presented in Table 7. There is a noticeable falling behind in the number and quality of performed shots and strikes during matches with the top eight teams – we believe, this is one of the reasons why the teams ranked 9<sup>th</sup> – 12<sup>th</sup> did not get a better table position. Thus, it is necessary to make adjustments to the training process of the Russian national team while getting ready for the final round of the 2014 World Championship, and one of the aspects the training staff of the Russian team should be focused on is actions to improve effectiveness of shots and strikes on the opponent's goal.

**Table 7.** Parameters of games of men's national floorball teams (Estonia, Russia, Poland, the USA) which took 9-12 places at the 2012 World Championship.

№	Parameters	1 <sup>st</sup> – 4 <sup>th</sup> places		5 <sup>th</sup> – 8 <sup>th</sup> places		9 <sup>th</sup> – 12 <sup>th</sup> places		13 <sup>th</sup> – 16 <sup>th</sup> places	
1	Number of games	4		4		4		4	
2	Total number of goals	10		13		40		40	
3	Average number of goals	2.5±1		3.25±0.95		5±2.6		10±3.8	
4	Total number of shots and strikes	155		137		467		277	
5	Average number of shots and strikes	38.7±20.5		34.2±17.2		58.4±18.3		69.2±26.7	
6	Balls cleared by goal-keepers	67	43.2*	38	27.7*	150	32.1*	71	25.6*
7	Balls taken by field players (blocked ones)	47	30.3*	44	32.1*	143	30.6*	85	30.7*
8	Wide shots	31	20.0*	42	30.7*	134	28.7*	81	29.2*
9	Number of goals	10	6.5*	13	9.5*	40	8.6*	40	14.5*
10	Accuracy rate (AR, %)	49.7		37.2		40.7		40.1	
11	Overall effectiveness rate (OER, %)	6.5		9.5		8.6		14.5	
12	Effectiveness rate of shots and strikes that reached the goal mouth (ERM, %)	13		25.5		21.1		36.0	

The four outsiders of the World Championship final are characterized by the low percentage of final offensive actions implementation that did not exceed 9 %, as well as the low effectiveness of matches – from 1.75 to 5.6 goals per match depending on the skill level of the opponent (Table 8).

**Table 8.** Parameters of games of men's national floorball teams (Canada, Hungary, Japan, Singapore) which took 13-16 places at the 2012 World Championship.

№	Parameters	1 <sup>st</sup> – 4 <sup>th</sup> places		5 <sup>th</sup> – 8 <sup>th</sup> places		9 <sup>th</sup> – 12 <sup>th</sup> places		13 <sup>th</sup> – 16 <sup>th</sup> places	
1	Number of games	4		4		4		4	
2	Total number of goals	7		7		12		45	
3	Average number of goals	1.75±1.25		1.75±0.95		3±2		5.6±3	
4	Total number of shots and strikes	132		124		154		497	
5	Average number of shots and strikes	33±19.6		31±8.6		38.5±4.7		62.1±18.2	
6	Balls cleared by goal-keepers	46	34.8*	39	31.5*	43	27.9*	163	32.8*
7	Balls taken by field players (blocked ones)	43	32.6*	47	37.9*	40	26.0*	143	28.8*
8	Wide shots	36	27.3*	31	25.0*	59	38.3*	146	29.4*
9	Number of goals	7	5.3*	7	5.6*	12	7.8*	45	9.0*
10	Accuracy rate (AR, %)	40.1		37.1		35.7		41.8	
11	Overall effectiveness rate (OER, %)	5.3		5.6		7.8		9.0	
12	Effectiveness rate of shots and strikes that reached the goal mouth (ERM, %)	13.2		15.2		21.8		21.6	

### Conclusions

1. There were defined indices of accuracy and effectiveness of shots and strikes performed by members of the men's national teams in the final round of the 2012 World Floorball Championship in Switzerland.
2. Trends of improvement of efficiency of offensive actions were detected compared to the 2010 World Championship.
3. The findings are of considerable practical importance for trainers of national and club teams of the world and can also be used while planning the training process of elite floorball players and assessing its effectiveness.

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