

ANALYSIS OF 2012 BEACH HANDBALL WORLD CHAMPIONSHIPS

Introduction

We have recently completed the 2012 Beach Handball World Championships, which, we could say, was a very important championship for many reasons. Following 2010 Antalya, representatives of five continents (Europe, Asia, Africa, Oceania, and South America) were all at the tournament, which in our view illustrates the progress of beach handball. In previous years, fewer teams were attending World Championships, whereas for the second time in a row there were 12 teams each for men and women. As a result, similar to Antalya 2010, men and women played 56 matches each, totalling 112 games. This compares to 57 in 2004, 66 in 2006, and 84 in 2008.

There were four teams from Europe (Croatia, Russia, Spain, Ukraine), one from Oceania (Australia), four from Asia (Bahrain, Kuwait, Oman, Qatar), one from Africa (Egypt), and two from South America (Brazil, Uruguay). Men from Brazil, Croatia, and Egypt were present at all five tournaments up until now. It was interesting to see that some regular attendees of previous championships, like Turkey and Hungary, were not there in 2012 Championships. This year's champions Brazil have won three of the last four championships. Brazil has played in the final at all subsequent tournaments after finishing ninth in their first championship. Silver medallist Ukraine, who weren't able to attend the previous three tournaments, proved that they deserved their place in Oman, following their success in the last European Championship in Umag 2011. The tradition of having a new third placed team continued in this tournament as 2008 World Champion Croatia won the bronze medal in 2012. Croatia have played in the semi-final in three of the five world championships.

M	2004 EGYPT	2006 BRAZIL	2008 SPAIN	2010 TURKEY	2012 OMAN
AUS	-	-	-	12	12
BRN	7	6	-	-	9
BRA	9	1	2	1	1
CRO	4	7	1	7	3
DOM	-	10	-	-	-
EGY	1	4	4	4	6
GER	-	8	-	-	-
HUN	6	5	7	2	-
IRI	-	-	11	-	-
KUW*	-	-	-	-	10
LBA	-	-	12	11	-
OMA	8	-	-	9	8
PAK	-	-	10	-	-
QAT	-	-	-	10	7
RUS	3	9	8	-	4
SPA	-	3	5	8	5
SRB	-	-	3	-	-
TUR	2	2	6	3	-
UKR	5	-	-	-	2
URU	-	-	9	-	11

(*) Participated under the flag of the International Olympic Committee

Figure 1 Men's World Championship Attendances and Rankings

W	2004 EGYPT	2006 BRAZIL	2008 SPAIN	2010 TURKEY	2012 OMAN
AUS	-	-	-	-	8
BRA	6	1	3	3	1
BUL	-	4	-	-	-
CHN	-	-	12	11	9
CRO	4	6	1	6	5
DEN	-	-	-	2	2
DOM	-	10	11	-	-
ESP	-	-	2	9	-
GER	-	2	-	-	-
HKG	8	-	-	-	-
HUN	5	7	-	7	4
ITA	3	8	4	8	7
JAP	7	-	-	10	-
MKD	-	-	10	-	-
NOR	-	-	6	1	3
NZL	-	-	-	12	-
POL	-	-	-	-	10
RUS	1	3	5	-	-
SIN	-	-	-	-	12
SRB	-	-	8	-	-
THA	-	-	-	-	11
TUR	2	5	-	5	-
UKR	-	-	9	4	-
URU	-	9	7	-	6

Figure 2 Women's World Championship Attendances and Rankings

Looking at women's competition, we again see some interesting occurrences. First we look at the continental breakdown of competing teams: six from Europe (Croatia, Denmark, Hungary, Italy, Norway and Poland); two from South America (Brazil and Uruguay); one from Oceania (Australia) and three from Asia (China, Singapore and Thailand). Brazil, Croatia, and Italy were present at all five tournaments until now; while Oman 2012 was the first world championships for Australia, Poland, Singapore and Thailand. 2006 World Champions Brazil won the gold again in 2012, following two bronze medals in between their successes. Denmark, who won the silver medal in its first tournament in Antalya 2010, proved its strength by playing in the final once again. The defending champions Norway came third. Despite a young squad, Hungary was able to play in the semi-final thanks to their approach to the game as well as solid

playing mentality. However, undoubtedly, China

and Australia were the most conspicuous teams. China continued with their upward trend in the last three tournaments and came ninth. Although Chinese women are still not at the top level, their approach to the game as well as their attempt to play "real" beach handball was spectacular to watch. Similarly, as one of the weakest teams on paper before the tournament, Australia played better handball every game and they came eighth in their first ever championship.

There were some disappointments as well in Oman 2012. The Spanish men who were very successful in Europe were not close to a top four finish; the semi-finalist of all previous tournaments Egypt came only sixth; host Oman lost to Russia in the first round and came eighth despite all their support.

A leading women handball team Italy continued its declining trend and came seventh while defending European champion Croatia could not reach semi-finals.

Morphological Analysis

The morphological study is based on the age, height and weight of all players, except some teams, whose data was unavailable. The analysis of all players is showed in the Figures 3 and 4.

In the men's category, from all players observed, the average height is 188.2 cm, Croatia was the tallest team (average 193.0 cm) and Uruguay was the shortest team (average 183.5 cm).

In terms of weight, Brazil had the highest average weight (95.5 kg). Russia was the lightest team with an average weight of 81.3 kg.

An average age across all teams of 27.2 years, Bahrain was the oldest team and with an average of 29.3 years and Ukraine the youngest team with an average year of 25.0 years.

In the women's category, from all players observed, the total average height is 173.8 cm, China was the tallest team (average 178.8 cm) and with an average height of 12.8 cm less than China, Thailand was the shortest team (166.0 cm).

In terms of weight, Denmark had the highest average weight (average 71.9 kg) with a difference of 11.1 kg with Thailand team, which was also the lightest team (60.8 kg).

The players were, on average, an age of 25.1 years, Italy being the oldest team with an average age of 29.0 and Thailand the youngest team with an average of 20.5 years.

	Ø Age	Ø Height	Ø Weight	Ø Caps BH
AUS	25,1	185,1	85,6	3,9
BRA	28,6	189,4	95,5	46,1
BRN	29,3	N/A	N/A	N/A
CRO	27,6	193,0	94,5	N/A
EGY	29,1	190,6	93,1	18,6
ESP	27,8	185,3	87,6	21,2
KUW*	25,4	N/A	N/A	N/A
OMA	27,4	N/A	N/A	N/A
QAT	26,2	191,0	92,6	6,0
RUS	27,2	184,1	81,3	N/A
UKR	25,0	191,4	82,0	16,5
URU	28,0	183,5	84,1	16,8
AVG	27,2	188,2	88,5	18,4

(*) Participated under the flag of the International Olympic Committee

Figure 3 Oman 2012, Morphometrics Men

	Ø Age	Ø Height	Ø Weight	Ø Caps BH
AUS	24,7	173,2	70,1	1,4
BRA	26,8	172,5	65,2	34,8
CHN	25,5	178,8	70,4	25,8
CRO	25,8	173,5	64,6	N/A
DEN	27,0	177,1	71,9	12,5
HUN	23,1	176,6	64,0	20,3
ITA	29,0	173,7	67,4	N/A
NOR	25,9	N/A	N/A	N/A
POL	26,9	172,9	71,3	14,3
SIN	20,8	N/A	N/A	N/A
THA	20,5	166,0	60,8	4,1
URU	24,6	N/A	N/A	N/A
AVG	25,1	173,8	67,3	16,2

Figure 4 Oman 2012, Morphometrics Women

MEN'S MEDAL TABLE					
RANK	NATION	GOLD	SILVER	BRONZE	TOTAL
1	BRAZIL	3	1	0	4
2	CROATIA	1	0	1	2
3	EGYPT	1	0	0	1
4	TURKEY	0	2	1	3
5	HUNGARY	0	1	0	1
	UKRAINE	0	1	0	1
	RUSSIA	0	0	1	1
7	SPAIN	0	0	1	1
	SERBIA	0	0	1	1

Figure 5 Overall Medal Table - Men

Overall Picture

Men and women were divided into two groups with six teams in each group. The top three teams in the group stages moved on to the Main Round, while the last three teams played in the Consolation Round. There were not many surprises after the first round for the men. Russia, Brazil and Ukraine

from Group A; Croatia, Egypt and Qatar from Group B went through to the Main Round. However, almost every team had to wait until the very last game in the group stages to know their fate, which proves even the group stages were very competitive for men. Hosts Oman could not make the Main Round despite their win against Russia and three wins in the group stages. Similarly Qatar could not make it with head-to-head against Spain. In previous tournaments we would see teams that did not lose a period, while the top two in both groups (Russia, Brazil, Croatia and Egypt) had a loss each, another proof of how competitive the matches were.

In women's tournament Denmark, Croatia and Uruguay from Group A; and Brazil, Norway and Hungary from Group B made it to the Main Round. One of the title contenders Italy could not even make it through to the Main Round, while Brazil won all its matches 2-0, without losing a period. After the Preliminary Round, teams with a beach handball history (for example Croatia, Brazil, Norway and Hungary) proved how much gap there was between them and relatively newer teams like Australia, Thailand, China, Singapore; especially tactically and technically. The gap amongst men was relatively smaller. Among women, Brazil was by far better than European teams.

Main Round and Consolation Round games were much more competitive for both men and women as teams were of relatively more equal levels. Russian men who only lost to Oman (who did not make the Main Round), started the Main Round with zero losses; and used this chance to beat Spain, Egypt and Croatia and ended the round unbeaten. Brazil and Croatia followed Russia, while Ukraine (who started Main Round with zero points) had two wins with 2-1 scores became the last semi-finalists. Spain, who generally made it to higher rounds in many previous tournaments, started the Main Round with zero points and could not go further.

The results for the women were a little different. Preliminary Round's dominant team Brazil became second by losing to Croatia and Denmark. Denmark finished the Main Round at the top, while Norway came third. Defending European champion Croatia lost to Norway 2-1 in the Main Round following its 2-1 loss to Denmark at the group stages. Some authorities' final contender Croatia lost its last game to Hungary with a shoot-out.

From the Main Round, Russia, Brazil, Croatia and Ukraine in men's competition made it to the semi-finals. In the women's tournament, Denmark, Brazil, Norway and Hungary were the semi-finalists. The men's semi-finals were very "equal-weighted", where Brazil beat Croatia in a very close game in two sets (18-14, 15-14), while Ukraine showed once again that they are a "shoot-out team" by beating Russia 2-1. Women semis were less competitive: Denmark beat Hungary (19-16, 26-16) and Brazil beat Norway (22-14, 16-10; both very easily with 2-0.

The men's final was also very competitive. Ukraine this time lost in shoot-out to Brazil. The Brazilian women had an easy final similar to the semi-final and outclassed Denmark with 20-10 and 17-14 to become champions. However, despite a large gap in scores, all teams' attacking varieties as well as hard-working defensive mentalities were one of the big positives. At the end of a 6-day marathon,

WOMEN'S MEDAL TABLE					
RANK	NATION	GOLD	SILVER	BRONZE	TOTAL
1	BRAZIL	2	0	2	4
2	NORWAY	1	0	1	2
	RUSSIA	1	0	1	2
4	CROATIA	1	0	0	1
5	DENMARK	0	2	0	2
6	TURKEY	0	1	0	1
	GERMANY	0	1	0	1
	SPAIN	0	1	0	1
9	ITALY	0	0	1	1

Figure 6 Overall Medal Table - Women

Brazil made a double with gold in both men and women, and proved that they have become a brand in beach handball.

Score Analysis

There were 112 games played in the 2012 Beach Handball Championship. In the 56 men games the average number of points per game was 68.09 (2010: 67.96) including shoot-outs, and 63.13 (2010:64.44) without the shoot-outs. Although below 2010, the averages were almost in line with 2008 levels. 23 out of 56 men games (41%) ended with a shoot-out, the highest ever. 6 of the 9 Main Round games ended with a shoot-out, another proof of the competitiveness at the Main Round stage.

In the 56 women games the average points per game was 60.12 (2010: 60.34) including shoot-outs, and 59.96 (2010:56.43) without the shoot-outs; which are the highest averages ever. Although below 2010, the averages were almost in line with 2008 levels. 14 games (25%) ended with a shoot-out, below last two championships; which shows the gap in between women teams.

M	2004	2006	2008	2010	2012
	El Gouna (EGY)	Rio de Janeiro (BRA)	Cadiz (ESP)	Antalya (TUR)	Muscat (OMA)
Participants	9	10	12	12	12
Total match	29	33	42	56	56
Shoot-out	13	13	15	16	23
Percentage of S/O	45%	39%	36%	29%	41%
Total goals	1592	1970	2655	3609	3535
Total goals (incl. S/O)	1754	2134	2857	3806	3813
Goals per game	54,90	59,70	63,21	64,45	63,13

Figure 7 World Championships (Men) Overview

W	2004	2006	2008	2010	2012
	El Gouna (EGY)	Rio de Janeiro (BRA)	Cadiz (ESP)	Antalya (TUR)	Muscat (OMA)
Participants	8	10	12	12	12
Total match	30	33	42	56	56
Shoot-out	7	8	17	18	14
Percentage of S/O	23%	24%	40%	32%	25%
Total goals	1383	1568	2311	3160	3190
Total goals (incl. S/O)	1441	1673	2496	3379	3367
Goals per game	46,10	47,52	55,02	56,43	56,96

Figure 8 World Championships (Women) Overview

Analysis of Attacking Variations

Similar to Cadiz and Antalya, a group of specialist statisticians followed and documented attacking

TEAM	MATCHES PLAYED	TOTAL			INF			SPS			SPE			DIG			OSG			ONP			P6M			PUNISHMENTS			
		G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	1st	2nd	RC	EXC
CRO	10	191	316	60,44%	54	72	75,00%	97	162	59,88%	24	58	41,38%	1	4	25,00%	0	0	0,00%	7	9	77,78%	8	11	72,73%	9	3	0	0
AUS	9	89	245	36,33%	8	32	25,00%	44	106	41,51%	23	79	28,11%	3	4	75,00%	1	3	33,33%	4	9	44,44%	6	12	50,00%	7	0	1	0
URU	9	142	271	52,40%	24	45	53,33%	74	141	52,48%	25	52	48,08%	3	10	30,00%	0	0	0,00%	11	14	78,57%	5	9	55,56%	10	1	0	0
BRA	10	217	344	63,08%	118	189	62,43%	47	75	62,67%	28	46	60,87%	0	2	0,00%	0	0	0,00%	9	11	81,82%	15	21	71,43%	8	1	1	0
OMA	9	168	322	52,17%	24	48	50,00%	85	164	51,83%	29	59	49,15%	4	10	40,00%	0	0	0,00%	13	18	72,22%	13	23	56,52%	13	2	0	0
RUS	10	205	317	64,67%	54	79	68,35%	71	126	56,35%	36	64	56,25%	4	4	100,00%	0	0	0,00%	21	23	91,30%	19	21	90,48%	13	2	1	0
UKR	10	191	329	58,05%	28	48	58,33%	108	179	60,34%	28	67	41,79%	1	1	100,00%	1	1	100,00%	14	19	73,68%	11	14	78,57%	10	3	3	0
BAH	9	154	287	53,66%	16	42	38,10%	72	150	48,00%	30	46	65,22%	7	11	63,64%	0	0	0,00%	17	20	85,00%	12	18	66,67%	11	3	1	0
IOC	9	130	277	46,93%	26	60	43,33%	58	124	46,77%	22	58	37,93%	6	11	54,55%	0	0	0,00%	12	17	70,59%	6	7	85,71%	15	3	0	0
QAT	9	175	302	57,95%	44	87	50,57%	63	99	63,64%	39	74	52,70%	7	14	50,00%	0	0	0,00%	15	19	78,95%	7	9	77,78%	16	2	0	0
SPA	9	169	283	59,72%	46	65	70,77%	71	127	55,91%	30	60	50,00%	1	2	50,00%	0	0	0,00%	10	14	71,43%	11	15	73,33%	4	1	1	0
EGY	9	144	276	52,17%	35	70	50,00%	62	121	51,24%	28	60	46,67%	1	4	25,00%	0	0	0,00%	9	9	100,00%	9	12	75,00%	15	3	0	0
TOTAL	56	1975	3569	55,34%	477	837	56,99%	852	1574	54,13%	342	723	47,30%	38	77	49,35%	2	4	50,00%	142	182	78,02%	122	172	70,93%	131	24	8	0

Figure 9 Oman 2012, Overall Team Statistics Men

variations at the 2012 World Championships. The data is very helpful especially in analysing the trends in shooting options of teams in such a relatively new sport. It also helps to analyse the differences among different schools and teams. Men appear to use much more different attacking options compared to women. Similar to previous championships, the physical strength, hard defensive nature and technical capabilities of male teams resulted in a wider selection of attacking options. Men have taken 3,569 shots on goal (2010: 3,656) in 56 games played. 1,975 of these shots (2010: 2,035) resulted in a goal: 55.34% vs. 55.66% in 2010. Average shots per game were 63.73, less than the average of 65.3 in Antalya 2010 but greater than an average of 61.4 of Cadiz 2008. The 55.34% efficiency rate was below both Antalya 2010 and Cadiz 2008 (57.46%).

Men have largely taken three types of shooting options: spin shot (44%), shot in flight (24%), and specialist (20%). In Cadiz 2008, spin-shot was 44.90% while in Antalya 2010 the ratio went down to 39.80%.

However, the spin shot average rose to a percentage more in line with 2008. One reason for this is certainly the gap within competing teams.

Inflight shots have continued their upward trend since 2008. In other

words, the rise in spin-shots does not affect inflight shots negatively. Inflight reached its highest level out of the last three tournaments in Oman. Specialist shots have not shown much volatility in recent years; however the decline in one point goal rates is interesting. This also shows that teams have improved their techniques in spin-shot and inflight shots, which sometimes were awarded one point because of weak technical abilities.

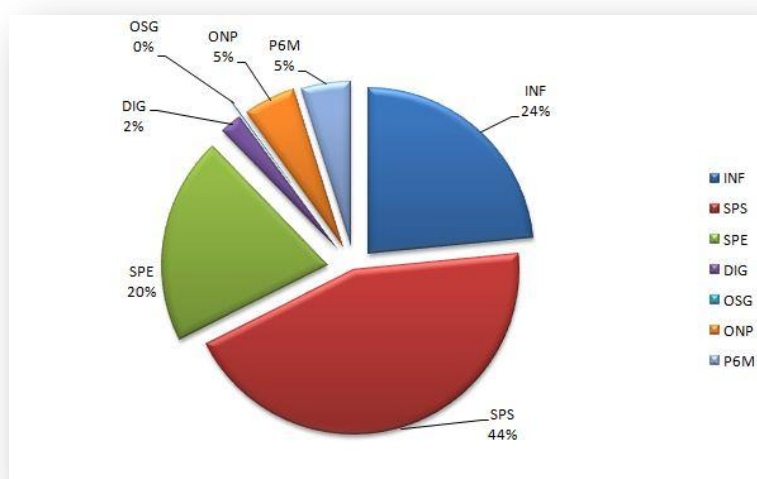


Figure 10 Breakdown of attacking options (men)

	Total Goals	Total Shots	SPS				INF				SPE				ONP			
			Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots
2008	1482	2579	654	1158	44,13%	44,90%	287	524	19,37%	20,32%	314	543	21,19%	21,05%	74	113	4,99%	4,38%
2010	2035	3656	810	1455	39,80%	39,80%	460	841	22,60%	23,00%	397	762	19,51%	20,84%	159	284	7,81%	7,77%
2012	1975	3569	857	1574	43,39%	44,10%	477	837	24,15%	23,45%	342	723	17,32%	20,26%	142	182	7,19%	5,10%

Figure 11 Comparison WChs (men), percentage of selected types of shots

Per game shot averages are led by 28.10 spin-shots per game, followed by with 14.95 inflight, and 12.92 specialist shots per game of total 63.73 shots per game. Average one-point shots per game was a mere 3.25. These were either opted by low profile teams or to guarantee a score at the end of a

	2008			2010			2012		
	GOAL	ATTEMPT	%	GOAL	ATTEMPT	%	GOAL	ATTEMPT	%
TOTAL	1482	2579	57,46	2035	3656	55,66	1975	3569	55,34
INF	287	524	54,77	460	841	54,70	477	837	56,99
SPS	654	1158	56,48	810	1455	55,67	852	1574	54,13
SPE	314	543	57,83	397	762	52,10	342	723	47,30
DIG	35	82	42,68	54	106	50,94	38	77	49,35
OSG	0	1	0,00	14	25	56,00	2	4	50,00
ONP	74	113	65,49	159	284	55,99	142	182	78,02
P6M	117	155	75,48	141	183	77,05	122	172	70,93

Figure 12 Comparison 2008-2010-2012 (men)

game; in addition to the spectacular shots awarded with one point by the referees due to low technical ability. It also appears that the only spectacular goal options used were almost exclusively inflight and spin-shots. There were only 4 other options used during the whole tournament.

Looking at the attacking variations of the top four teams (Brazil, Ukraine, Croatia, and Russia) we can observe the differences in these teams' characteristics. Brazil prefers inflight heavily (18.9 per game) while all others prefer spin-shots: Ukraine 17.9, Croatia 16.2, and Russia 12.6. Croatia and Russia's second choice is inflight (Croatia 7.2 and Russia 7.9). Ukraine's second preference is specialist (6.7). However we should notice the efficiency ratios here. Ukraine's specialist efficiency is 41.79% which shows one man is very important for the team's attacks, per game goals clearly proves this view. Ukraine has taken the most specialist shot among the four, yet could only score 2.8 goals per game compared to Brazil's 4.6 with less shots. Russia has taken similar (6.4) specialist shots with Ukraine but has scored 3.6 on average. Another interesting observation comes with inflight shots. Brazil is by far the best inflight shot team of the tournament. Average per game inflight goals are 2.8 for Ukraine and 5.4 for Croatia and Russia, compared with 11.8 for Brazil.

In women's games on the other hand we have seen much less variety in attacking options. There were 3,201 shots taken during the whole 56 games in the tournament, much below Antalya 2010's 3,701. In Antalya, women have taken more shots than men, and now they were well behind the men.

TEAM	MATCHES PLAYED	TOTAL			INF			SPS			SPE			DIG			OSG			ONP			P6M			PUNISHMENTS			
		G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	G	S	%	1st	2nd	RC	EXC
CRO	9	150	292	51,37%	28	51	54,90%	78	151	51,66%	25	58	43,10%	3	6	50,00%	0	0	0,00%	9	16	56,25%	7	10	70,00%	10	1	0	0
CHN	9	133	226	58,85%	23	39	58,97%	48	84	57,14%	29	53	54,72%	1	4	25,00%	0	0	0,00%	27	39	69,23%	5	7	71,43%	14	4	1	0
DEN	10	181	308	58,77%	5	7	71,43%	114	195	58,46%	34	68	50,00%	2	8	25,00%	0	0	0,00%	14	15	93,33%	12	15	80,00%	7	2	0	0
AUS	9	107	231	46,32%	11	24	45,83%	62	141	43,97%	22	47	46,81%	0	2	0,00%	0	0	0,00%	5	9	55,56%	7	8	87,50%	6	0	0	0
ITA	9	157	281	55,87%	19	42	45,24%	60	119	50,42%	37	69	53,62%	6	9	66,67%	0	0	0,00%	24	28	85,71%	11	14	78,57%	5	2	1	0
URU	9	124	253	49,01%	14	39	35,90%	60	130	46,15%	20	46	43,48%	3	6	50,00%	0	0	0,00%	16	19	84,21%	11	13	84,62%	22	0	1	0
BRA	10	205	316	64,87%	89	139	64,03%	59	93	63,44%	39	56	69,64%	5	11	45,45%	0	0	0,00%	10	13	76,92%	3	4	75,00%	7	3	1	0
SIN	9	65	189	34,39%	4	17	23,53%	6	27	22,22%	6	32	18,75%	0	5	0,00%	0	2	0,00%	48	101	47,52%	1	5	20,00%	9	1	0	0
HUN	10	178	313	56,87%	14	25	56,00%	107	199	53,77%	31	49	63,27%	3	6	50,00%	0	0	0,00%	13	18	72,22%	10	16	62,50%	8	2	0	0
POL	9	147	274	53,65%	28	45	62,22%	78	148	52,70%	18	48	37,50%	2	6	33,33%	0	0	0,00%	13	16	81,25%	8	11	72,73%	10	1	0	0
NOR	10	189	325	58,15%	6	10	60,00%	128	220	58,18%	29	55	52,73%	7	19	36,84%	0	0	0,00%	5	6	83,33%	14	15	93,33%	5	1	0	0
THA	9	139	258	53,88%	6	16	37,50%	64	125	51,20%	43	70	61,43%	3	5	60,00%	0	0	0,00%	20	35	57,14%	3	7	42,86%	9	4	1	0
TOTAL	56	1775	3266	54,35%	247	454	54,41%	864	1632	52,94%	333	651	51,15%	35	87	40,23%	0	2	0,00%	204	315	64,76%	92	125	73,60%	112	21	5	0

Figure 13 Oman 2012, Overall Team Statistics Women

One of the main reasons should be that teams with low technical capacity like Singapore, Thailand, and also to some extent Australia, China and Poland have taken fewer shots on average. For example, champions Brazil have taken 31.6 shots per game, the other finalist Denmark 30.8 compared with Singapore's 21 or China's 25.1.

Women teams' shot choices were mainly spin-shot, inflight and specialist; however spin-shot was the favourite type with a 50% weight. An interesting point is that women have lowered their one-point shot selection significantly. In 2008, one-point shots were

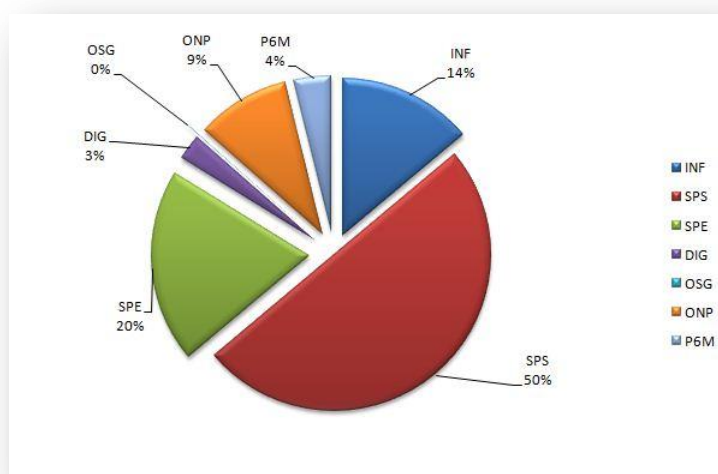


Figure 14 Breakdown of attacking options (women)

13.21% of all shots taken, which went up to 18.18% in 2010. In Oman however, this ratio dropped significantly to 9.64%. This proves that teams are not considering one point shots as “game-winning shots”, and also have improved their technical ability in 2-point shots. A similar decline can be

	Total Goals	Total Shots	SPS				INF				SPE				ONP			
			Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots	Goals	Shots	% Goals	% Shots
2008	1375	2520	589	1125	42,84%	44,64%	138	269	10,04%	10,67%	275	529	20,00%	20,99%	218	333	15,85%	13,21%
2010	1924	3701	832	1672	43,24%	45,18%	115	243	5,98%	6,57%	415	824	21,57%	22,26%	377	675	19,59%	18,24%
2012	1775	3266	864	1632	48,68%	49,97%	247	454	13,92%	13,90%	333	342	18,76%	10,47%	204	315	11,49%	9,64%

Figure 16 Comparison WChs (women), percentage of selected types of shots

observed in specialist shots as well: from 22.26% in 2010 to 19.93% in 2012. The decline in one-point shots increased the weight of inflight shots: from 10.67% in 2008 and 6.57% in 2010 up to 13.90% in 2012. Nevertheless, spin-shots were the highest choice with 50%.

W	2008			2010			2012		
	GOAL	ATTEMPT	%	GOAL	ATTEMPT	%	GOAL	ATTEMPT	%
TOTAL	1375	2520	54,56	1924	3701	51,99	1775	3266	54,35
INF	138	269	51,30	115	243	47,33	247	454	54,41
SPS	589	1125	52,36	832	1672	49,76	864	1632	52,94
SPE	275	529	51,98	415	824	50,36	333	651	51,15
DIG	51	136	37,50	62	129	48,06	35	87	40,23
OSG	1	1	100,00	1	3	33,33	0	2	0,00
ONP	218	333	65,47	377	673	56,02	204	315	64,76
P6M	108	134	80,60	122	155	78,71	92	125	73,60

Figure 15 Comparison 2008-2010-2012 (women)

Let's look at the top 4 teams' (Brazil, Denmark, Norway, and Hungary) shot selections. Similar to men, Brazil's different approach to the game is quite visible again. Brazil have taken 139 inflight shots during the tournament, almost 2/3 of all inflight shots taken by women during the championships. Brazil's inflight selection ratio was 43.99% compared to Norway's 3.08%, Hungary's 7.99% and Denmark's 2.27%. These three teams largely opted for spin-shot: Denmark 63.31%, Norway 67.69% and Hungary 63.58%. Brazil's spin-shot selection was only 29.43%. The three finalists (other than Brazil) have opted for specialist shot as their second option: Denmark 22.08%, Norway 16.92% and Hungary 15.65%. Brazil's ratio was 17.72%. However shot efficiency made the main difference: Brazil accomplished to hit a shot efficiency of 63.44% in spin-shots and 69.64% in specialists. In other words, Brazil women were successful in two of every three shots taken. The champions have managed to score 8.9 inflight, 5.9 spin-shot and 3.9 inflight goals per game on average. When compared with other teams, the difference in Brazil's attacking mentality becomes quite visible. Brazil's goal ratios have a relatively more equal distribution than other teams, which helps creating alternatives when playing against different defensive structures.

Specialist usage

One of the most important factors that separates beach handball from other sports is specialist shots. When we compare beach handball games from ten years ago with today, the biggest difference is the usage of specialist shots. We cannot support our view with numerical analysis as

there were not enough data for earlier years. However, the difference in game mentalities proves that teams are using more versatile and very particular specialists.

Both men and women use three types of specialists: “shooter”, “playmaker” and “multi-tasked”.

Until recently, teams generally were using specialists that would only take shots. Now on the other hand, there are players who defined the way their teams play. Teams that are able to use their specialists “multi-tasked” can create alternative set plays and respond to various defensive plays. The difference is more visible in male teams. For example, champions Brazil’s first specialist Bruno Oliveira plays mainly as playmaker. In most of the attacking sets Oliveira plays a key role for Brazil. Similarly Croatia’s (Horvat Hrvoje) or Egypt’s (Ahmed Mohamed Saber) specialists lead the attack almost every time, but also draw attention with their shooter characteristics. This helps teams to create and use a variety of attacking options. On the other hand, some teams like Ukraine (Viktor Ladyko) use their specialist mainly as a shooter. As a result, the team’s success usually is parallel to the specialist’s success, which makes the defence’s job easier. The importance of “multi-tasked” specialists in beach handball’s future needs to be emphasized; especially those teams that are aiming to become a top team should be using top-level specialists that are both playmakers and shooters.

A similar trend is visible amongst the women. Teams like Denmark, Italy and Thailand have “shooter specialists” that take about 7 shots per game on average. There are

also teams who prefer playmakers, like Hungary (Krisztina Sado) or Uruguay (Luciano Moreira). Some teams use a “multi-tasker” such as Norway (Renate Saste Soemme) or Croatia (Filipa Ackar). In the case of Denmark, there are two specialists with different characteristics. For example Denmark’s Lise Knudsen uses her height advantage as a shooter while Maj Thornoe Johansen led the attacking force mostly as a playmaker, with the balls she receives from the wings. An interesting point is that

Country	First option Specialist (FOS)	(FOS) Goals (SPE)	(FOS) Shots (SPE)	%	Total number of specialists used	Total goals (SPE)	Total shots (SPE)	%
AUS	Benjamin Dawson	11	36	30,56%	7	23	79	29,11%
BRN	Jaffar Mohamed	16	26	61,54%	4	30	46	65,22%
BRA	Bruno Oliveira	21	33	63,64%	5	28	46	60,87%
CRO	Horvat Hrvoje	23	55	41,82%	2	24	58	41,38%
EGY	Ahmed Mohamed Saber	21	50	42,00%	3	28	60	46,67%
IOC	Saad Alhaidari	8	22	36,36%	7	22	58	37,93%
OMA	Sulaiman Abdullah	18	32	56,25%	5	29	59	49,15%
QAT	Mahmoud Osman	14	25	56,00%	7	39	47	82,98%
RUS	Anton Dache	24	44	54,55%	6	36	64	56,25%
SPA	Angel Fernandez Perez	17	36	47,22%	5	30	60	50,00%
UKR	Viktor Ladyko	28	65	43,08%	3	28	67	41,79%
URU	Juan Benitez	19	34	55,88%	7	25	52	48,08%

Figure 17 Specialist use of all teams (men)

Country	First option Specialist (FOS)	(FOS) Goals (SPE)	(FOS) Shots (SPE)	%	Total number of specialists used	Total goals (SPE)	Total shots (SPE)	%
AUS	Vanja Similjanic	9	18	50,00%	6	22	47	46,81%
BRA	Camila Ramos	30	45	66,67%	4	39	56	69,64%
CHN	Ling Ma	23	45	51,11%	5	29	53	54,72%
CRO	Filipa Ackar	21	49	42,86%	4	25	58	43,10%
DEN	Maj Thornoe Johansen	17	35	48,57%	6	34	68	50,00%
HUN	Krisztina Sido	22	34	64,71%	6	31	49	63,27%
ITA	Silvia Scamperle	31	58	53,45%	4	37	69	53,62%
NOR	Renate Saste Soemme	19	39	48,72%	7	29	55	52,73%
POL	Grazyna Pietras	16	38	42,11%	5	18	48	37,50%
SIN	Yvonne Loh Yi Jie	4	14	28,57%	6	6	32	18,75%
THA	Vanpen Sila	19	29	65,52%	7	43	70	61,43%
URU	Luciano Moreira	15	33	45,45%	6	20	46	43,48%

Figure 20 Specialist use of all teams (women)

Denmark has continuously rotated these two players without considering their effectiveness or success during the game. In many games, the defences had to face one specialist before even trying to defend against the other one. Norway women were another team that used two different specialists. However, Norwegian specialist decisions were not affected by playing style, rather by the winger specialists who could play close to the substitution area. However, the most interesting specialist among women was Brazilian Camila Ramos. Generally a playmaker, Ramos made important scoring contributions using her one-on-one skills (unlike many other specialists). Unlike other shooting specialists, Ramos is able to play one-on-one and take a shot from 6 metres, which is clearly seen in her shooting percentages. Some specialists of top teams had a shot efficiency below 50% while Camila Ramos hit 67%. We should also note the quality of passing of Brazil team, which is one of the most distinctive features of the Brazilian team; especially Ramos's success ratio in inflight passes. Therefore, for example, Croatia who could not manage a similar passing ratio, could not reach attacking efficiencies it had in previous tournaments.

Defensive approach

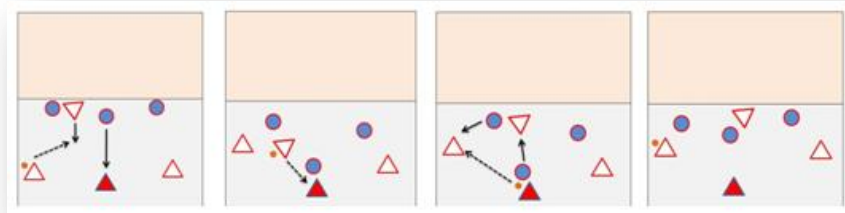
Beach handball characteristically is a sport of "majority attacking". Therefore, an effective defensive style is very important. A defensive approach with certain principles would be able to force attacking teams to look for different options. We have seen many different defensive tactics during the 112 games at the World Championships. However, the progress and variety in attacking has still not rubbed off on the team's defensive play.



Foremost, we have seen that men have used blockings more often, especially during wing shots. And more importantly, they have done this in a "cleaner" and regular way compared to previous championships. Top teams (Brazil, Croatia, Russia, Ukraine, etc.) from time to time use double blockings, which is an advantage particularly against spin-shots. Women have used wing blockings more often than previous tournaments. Brazil in particular, has used blocks in both wings almost every time. Top women teams have used wing blocks more often and with more success, which implies that spin-shots will become a more risky option, and more women will be opting for inflight in the future.

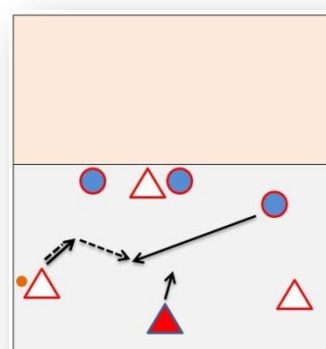
Women appear to be working more than men to create a defensive strategy. Brazil's semi-final match-up against Norway and their final match-up against Denmark created strategies to stop specialist Camilla Ramos's playmaking, though this was just an effort in good faith despite the extraordinary performance by right winger Patricia Scheppa. However, the most exciting defensive performance of the tournament came by defending European champion Croatia against Brazil. As the basic goal, the continuously moving and active defence tried to press the centre (specialist), and we

have seen the best implementation of this approach at the 2nd period of the Brazil-Croatia game (W35). In this approach, Croatia kept a small gap between wing defenders and



central defender, and was able to create a solid, active and moving defensive block. This way, the central playmaker (specialist) was put under an effective pressure and the defence was able to cut the inflight passes that would go to the wingers. The most critical point of this type of defence is high tempo. For example, because neither Denmark's nor Norway's defensive wingers were fast enough to cope with this tactic Brazilian wingers found lots of space. Croatia was able to keep Brazil at 10 points in the 2nd period and win the game 2-1.

Another defensive tactic created was Brazil's ball stealing from the wings. Brazilian wingers continuously pushed high and disturbed the attackers to squeeze them into the centre section which helped wingers to steal the ball.



Attacking mentality of the champions

Brazilian men and women both were certainly the most creative attacking teams of Oman 2012. Brazil tried different shooting options, created various attacking concepts and adapted easily to different defensive systems. We could summarize Brazil's attacking characteristic in a few bullet points:

- A strong one-on-one player specialist
- Wingers with high technical capacity in inflight and spin-shots
- A tall pivot with high technical capacity and strong positioning ability for inflight shots
- In case of pressure on central playmaker, the ability to rise and continue passing traffic
- High passing percentage by the specialist
- Simple-yet-effective playing sets, rather than complex sets

Neither men nor women at Brazil change the layout where the specialist is central playmaker unless necessary. From time to time, when needed, we have seen them using the specialist at the left wing (rarely right wing).

When we look at the position of shot takers of Brazil men and women, we see an interesting point. Brazil men shots are equally distributed among both wings and the pivot. The central playmaker Bruno Oliveira is heavily a distributor of the ball, and has not much of a shooting advantage. Brazil men take almost half of their inflight shots from pivot position. It is, relatively, more difficult to use pivots for inflight shot compared to wingers, this shows how well the team has worked on this and really perfected their technique.

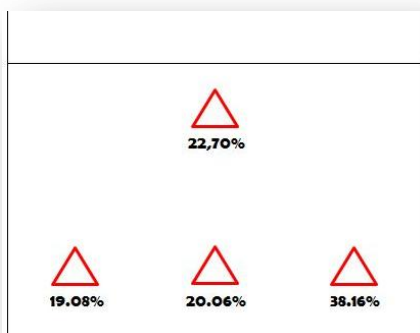


Percentages of all shots on 4 different positions – Brazil Men



Percentages of inflight shots on 4 different positions – Brazil Men

The women's case is a bit different. More than one third of the shots were taken from right wing. The right winger and tournament MVP Patricia Scheppa's extraordinary performance had an effect on the shot selection. There is a heavy tendency towards right wing when we look at the distribution of inflight shots: more than half. The second choice for inflight is pivot while left wing has been selected very rarely.

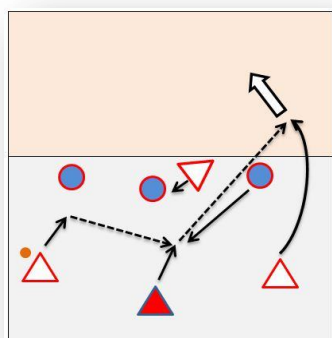


Percentages of all shots on 4 different positions – Brazil Women



Percentages of inflight shots on 4 different positions – Brazil Women

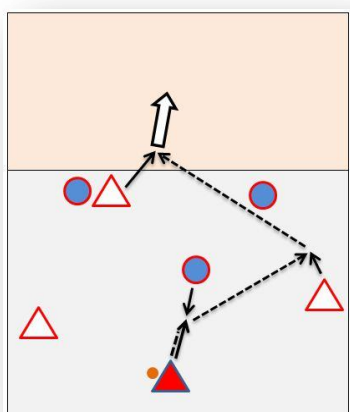
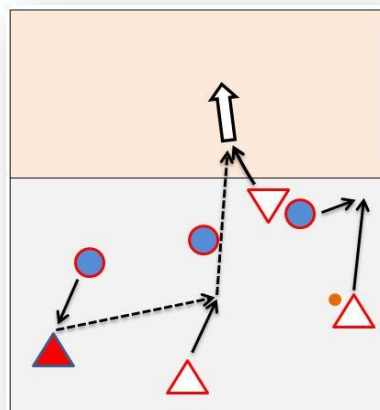
Despite being very simple, Brazil's attacking sets for both men and women are very effective and creative. Below we will try to analyse Brazil's attacking sets in further details to understand their game mentality in a better way.



In almost every attacking play, Brazil's central playmaker takes the role of a specialist and leads the attack. Therefore, whichever set is played; the passing percentage of the specialist defines the success of the set.

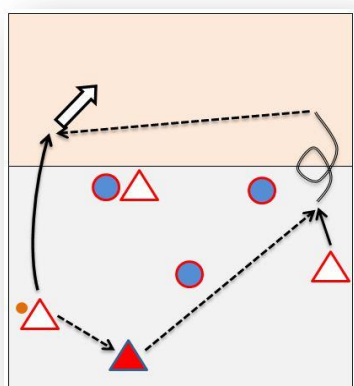
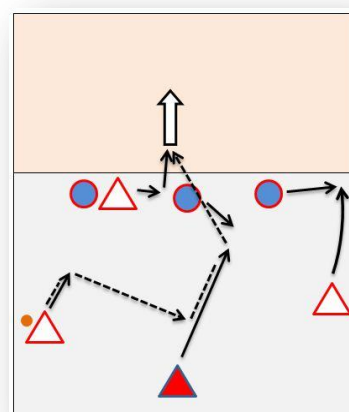
A set that Brazilian women use quite a lot: bringing together the high passing percentage of the specialist with the efficiency of right winger Patricia Scheppa inflight. Similarly, Norway used the same set by bringing the specialist into the left wing position.

This set, found to be very effective yet used rarely by the Brazilian men, is the one where the specialist was used at the left wing. The usual specialist Bruno Oliveira (No.6) moves to central playmaker position while Jarison Pereira (No.8) becomes the specialist in this attacking set. It has been used when there is pressure on the specialist at a high position, where Oliveira's ability to give long-range inflight passes was used effectively.

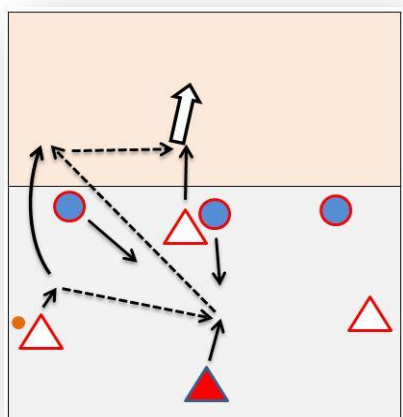


Another set effectively used by Brazilian women is where the specialist is being actively used to start pushing through the central position while two defenders are forced to become more attacking to create a big space for the pivot position. An alternative to this set is when the right wing defender is defending deep; the right winger can use the space in front to take a spin-shot.

Another set where a big space is created for the pivot at the back. Brazilian women have used this set following an active push where the central playmaker moves to a shooting position and the central defender is moving to the specialist. This way, the area left behind gives the pivot the chance to make an inflight shot.

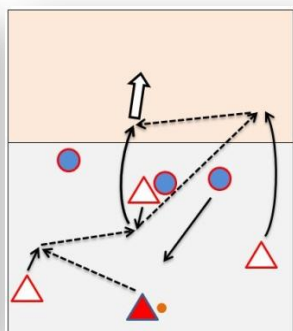
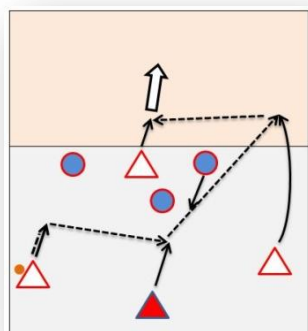
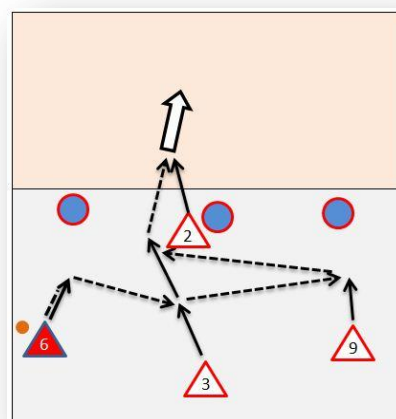


One of the most important aspects that separate Brazilian women from other teams is the way they have used the attacking zone in a very wide and deep way. As a result, high passing ability of the team results in spectacular sets. The central defender moves up to 8-9 metre levels to control the specialist and leaves a large space behind; which is used by both wingers in the set. A half spin by the right winger ends up with an inflight pass to the left winger, and results in a spectacular attacking play.



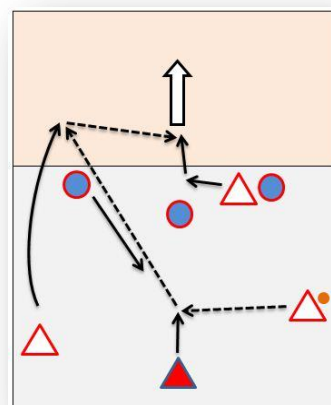
Another spectacular attacking set used by the Brazilian women. Double inflight is very attractive.

An their “in case of emergency” attacking set, when Brazilian women could not manage to score using a standard play. Scheppa (2) at an unusual pivot position, while specialist Camila Ramos (3) is at the central playmaker position. Milena Braga (6) becomes the specialist at the left wing. This opens up some alternatives for the set: when the central defender moves to defend the pivot more closely, there emerges a chance for central playmaker to take a spin-shot; or in case of left wing defender gets closer, there is a chance for the specialist to use the large space created.

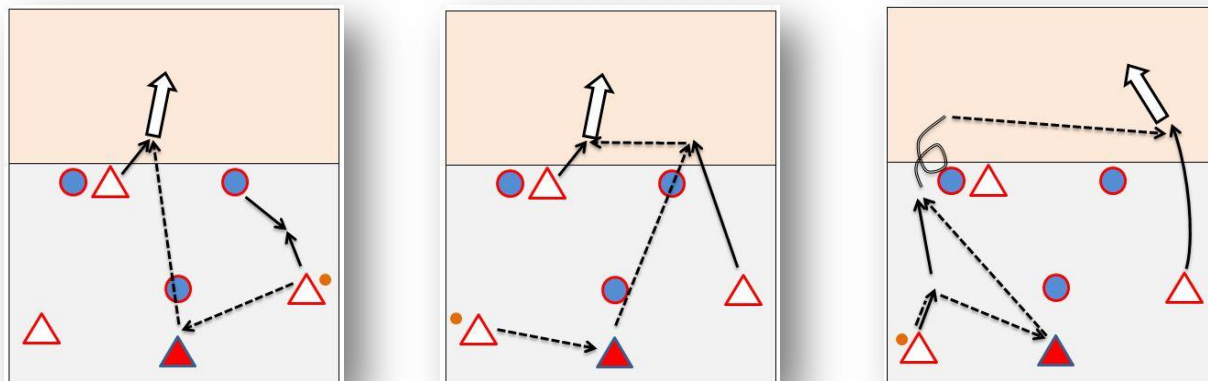


Since Brazilian women used the specialist heavily, especially to lead the passing traffic, teams in the further rounds used their wing defenders to pressure the specialist. However, as used as an alternative to each other many times, these two sets usually finished with a spectacular set because of the high passing and technical ability of the players.

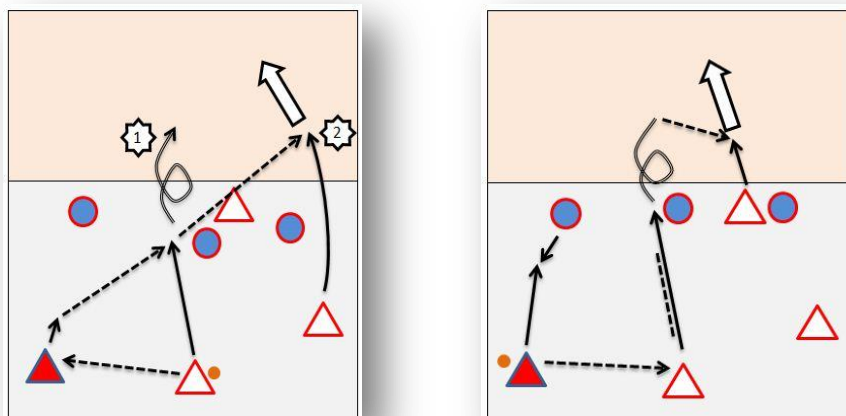
Similar to women, Brazilian men also used the double inflight sets often, given their high passing and shooting ability they have been using the set from both wings.



Defenders against Brazilian men (similar to against Brazilian women) have primarily tried to pressure the specialist. However, Brazil was very ready for this as can be seen in the three examples below, where large space opened up and high technical ability passes have been used. Brazil used these three sets quite often.



Another multi-alternative set used by Brazilian men, depending on their position, where the central playmaker attacks quickly and takes a spin-shot from the middle. The defender gets closer and while the central playmaker cannot find enough space, he sends an inflight pass to the right wing. The second set applies the same principle.



Conclusion

The 2012 Beach Handball World Championships, hosted in Muscat Oman, have been very important for many reasons. Apart from the success in the organisation of the event, the high level of refereeing was proven by the lack of any complaints or major post-match discussions. It has been a positive to observe the level both the referees and the delegates have reached during the tournament. Similarly, the level of knowledge of the rules by all attending teams, as well as the fair play competitiveness, was another positive for all beach handball lovers. The technical and tactical levels on display are worth analysing in many ways. First, we have seen that most of the relatively weaker teams have been closing the gap with the better teams very rapidly. We believe our view has been proven by many performances we have seen in both attacking and defensive plays. All attacking teams had a variety of attacking sets, many different alternatives and attractive attacking options. Similarly teams have progressed very well defensively.

In next year's World Games in Cali, Colombia, beach handball will certainly forge further ahead. For all beach handball lovers, this on-field progress also means that the dream of becoming an Olympic sport is in the near future...

Burak Tezcan

IHF BH Technical Delegate during the 2012 WChs