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ATTACK AGAINST SET DEFENCE

Theoretical and methodological considerations of attack against set defense

A comparative analyses of the team and group attack tactics of the leading men teams (2003 WCh, 2004 ECh, 2011 WCh, 2012 ECh

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ABSTRACT

Introduction: Analyzing the trends and developments of the leading male handball teams' attack against set defence is of utmost importance for developing a professional and up-to-date attack strategy in practice. In the first part of my thesis, I review the main theoretical and methodological characteristics of attack against set defence.

Methodology: I set up 4 hypotheses, and I attempt to prove them by analyzing the leading team's individual, group and team attack tactics.

My analyses and conclusions are all based on the official statistics of the given championship provided by both the EHF and IHF, video-analyses. Based on the findings of my analyses I show 7-8 basis attack formations per team.

Results: The research covers France, Russia, Spain, Sweden, Croatia and Germany. I attempted to define and explain the similarities, the differences between the applied attack tactics, and to explain the changes in a given team's tactics during the time period under scrutiny (2002-2012). I conclude the paper by determining those factors that had the strongest influence on the attack efficiency and consequently on the final ranking of a given team.

Key words: set defence, statistical analyses, video analyses, performance indicators, tactical pictures

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Introduction

The model of the game (4 phases):

1. Phase: Set defense

2. Phase: Gaining possession of the ball, counter-attack (simple fast break, extended fast break, complete fast break)

3. phase Attack against set defence

4. Phase Retreat

In handball, a clear distinction can be made between defense and attack, however according to the logic of handball defense and attack cannot be separated, the two are strongly integrated. Hence, the tactic in handball can be divided into two main parts.

- **Attack tactic**
- **Defence tactic**

There are many definitions of tactic in terms of sports, but all definitions have it common, that tactic is the intellectual part of the game, and is based on planning.

According to one definition, tactic is „a theoretical and practical, planned activity adapted to the changing circumstances.*”* (1. Csanádi, Football III.-15. page)

The applied defense tactic on the one hand is determined by the quality, the preparedness and the physical characteristic of the defense players alongside with the performance of the goalkeeper. On the other hand a successful defence tactic must take into account and strongly depends on the technical, tactical and physical characteristics of the team in attack The aim of attack is scoring a goal, meanwhile defense is aimed at gaining possession of the ball and preventing the other team from scoring.

- The analyses of the alternatives of attack tactic should be based on the defence system, the defence tactic of the other team and vice versa. Although the members of the team are

individual players, handball is a team sports, thus the activity of the players must be coordinated and harmonized, hence the activity and effectiveness of a given player cannot be evaluated individually.

- The game consists of different game situations (position play, changing position/crossing, mixed play.). Game situations on the other hand are solved by different game activities, using different technical elements that can be linked to each other in many different ways.

When building up and applying an attack tactic one must take into account

- The psychological, the physical characteristics of both teams,

- The technical abilities of both teams

- The tactic applied by the other team, the personality and special features of the coach of the other team.

- The external environment (the place of the match, the fans etc)

- All other elements that have the potential to influence the match (the style and personality of the referee, travel, time zones, weather conditions etc)

The attack tactic can be divided into individual, group and team attack tactic. The different phases are built upon each other. The attack attempts of the individual players are the basis of the group tactic elements that can be built into team tactic elements.

The tactical content of the relationship between two or more players:

- Static attack (position play) is characterized by good footwork, piston movement, different passing forms, blocking, freeing, different faking elements, gaining momentum, gaining space, creating local positional advantage.

- Combined play is characterized by running into an empty spot, passing the ball in between or behind the defenders or the combinations of these.

- Creating continuous play by switching positions, pick and roll or by the combination of these elements.

- Pick and roll in relationships between two or more players, the direction of movements, the positioning before the blocking action, the efficient linking of the pivot play with the position play and crossing elements.

According to the tactical need the 5:1 (one pivot) and 4:2 (two pivots) tactic can be varied.
It is of utmost importance to secure the linking of the different tactical elements in an effort to create continuous play. The preparatory and concluding phases of the attack elements must be exercised by building them upon each other.

The group tactical elements are maneuvers consisting of a few (2-4) players and are the main units of carrying out attack activity and it fundamentally determines the team tactic. The attack elements of the individuals and groups are integrated into the team tactical elements, with the final aim of creating a scoring opportunity. A given attack system and its flexible variations create the framework for establishing the tram tactic.

Fast break carried out by 2-4 players, with or without changing positions is a typical group tactical element, but plays against set defence (again, with our without changing position) is also an example of group tactical elements. (2)

"In team sports –so as in handball- the main unit for accomplishing duties is the group. The reason for this is that on the one hand, although the role of the individual is vital, his activity is limited and cannot produce constant successes over a long period, so the help of the teammates are necessary. On the other hand, because of the number of players, the possibility of co-coordinating a team activity does not always present itself" (3, Marczinka, 248. p)

Hence, to accomplish the duties of the attack, most frequently, the most suitable units are the groups, and the group tactical elements employed by 2-4 players, let them be either spontaneous or planned.

The group tactical elements can be considered as a transition phase between individual and team tactical elements, and can be flexibly employed with little organization to fit the need of a given game situation. (3)

There are different group attack tactical elements that can be transformed into team tactical elements. The elements are as follows:

- Parallel thrust
- Position play
- Changing position, crossing
- Passing to the pivot,
- Blocking/freeing

Any given team is more efficient, if a higher number of combinations has been learnt and applied efficiently.

So as to be highly efficient in attack, the above mentioned group tactical elements should be carried out with the highest possible efficiency and the lowest possible margin of error in a way that also takes into account the defence tactic applied by the other team.

So as to conclude the attack successfully one needs the teamwork of the players playing next to each other, behind or in front of each other. Efficient group tactical elements are needed that can be employed flexible against different defence systems and in changing game situations. These combinations are of utmost importance, since an efficient and well-organized attack is based on the linking of these elements. The more elements a team is able to employ, the wider the base to build a modern, combined attack system will be.

The team tactic consists of all elements that partly or entirely determine the positioning, the movement area, the direction of movement, the manner of the movement of the different players. To sum it up, this is a plan. The ultimate goal of attack is to build up a scoring position and successfully conclude it. To conclude the attack successfully, planning is essential. The position of the players should be carefully planned both in width and in depth, as it makes possible to initiate an attack attempt from the most suitable starting position and it affects the defence tactic of the opponent team.

The team tactic also determines the tasks of the individual players and their roles in the team play. However, it is also important, that all players can face situations, which must be solved individually, thus players must be prepared to make individual decisions and carry out individial actions for the sake of the team's success.

A given team can employ many different attack systems, and tactical elements, but the team tactic should be flexible to make the team able to adapt to the different game situations and to the defence systems and tactics of the other team.

„The attack attempts of the individual as well as those of the group are integrated into the team activity. This is at the same time the highest organizational unit of handball, and it ensures an appropriate environment for the individual to display his abilities by utilizing the help of the team mates, for the sake of the team's success.." (3, Marczinka, 268. page)

The principle prevails that individual players organized well in a team formation will achieve more than one by one.

Hypotheses

1. The leading men's handball teams in the world conclude approximately 80% of all attacks against set defence and approximately 70% of the goals results from attacks against set defence.
2. There are common group and team tactic solutions, which are employed by many teams, but these elements always contain team-specific motives.
3. Each team has its own style, there are group and team tactical elements against set defence that are used only by one team i.e. some are team-specific
4. The teams that have an adequate level of technical and tactical readiness in case of a failed tactical element are able to continue the game without interruption. They will widen the room for maneuver both in time and in space – taking into account the reactions of the defense - for the sake of successfully concluding the attack and score.

Methods

In this paper, I will examine the different team and group attack solutions against set defence, analyze the basic tactical elements and the different solutions of a given tactic.

I will also deal with the specific group and team attack solutions and alternatives, and examine the efficiency of the different elements. The analyses is based on the

- 2003 WCh Portugal
- 2004. ECh Slovenia
- 2011 WCh Sweden
- 2012 ECh, Serbia

I analyzed the different attack solutions of the French, German, Russian, Spanish, Swedish and Croatian teams, the differences and the common features of the attack tactics, the general and team specific developments during the time period under scrutiny, and the consequences of the change or no change of the coach.

The analyses is based on video-analyses and statistical analyses. I will present 7-8 different basis tactical means against set defense for each team.

Development

Basic tactical modules and theoretical considerations

In team sports –hence in handball also- it is the coach's duty to create a tactical plan for the team, to define the tasks and duties of the players both in defence and in attack. According to the modern theory of handball, both defence and attack can be offensive and defensive.

The basic playing situations must be analyzed extensively; the possible alternatives must be recognized and defined. The players should be aware of the possible range of alternatives in any given situation. During the game, the attacking and defending teams are in continuous interaction, the defence players react to the different situations either by adapting their tactics either spontaneously or in a planned manner.

Hence, in the tactical plan of a game, it is of utmost importance to plan and detail the expected chain of reaction-counter reaction, and it is the coach's responsibility to work out the different tactical solutions that would be deployed during the game. The next step is to learn and practice the alternatives and the possible reactions in the training phase in an effort to be able to use them precisely and fast in game situations.

We learnt from the experiences of the recent EChs and WChs that the tactical plan functions best if it is designed by mixing the alternative and the improvisation methods because it happens very frequently, that the defense players take the initiative and force the attacking players to react.

Before detailing the different team tactical elements, we have to say some words about the basic tactical modules.

The elements of attack

1. Technical elements

The rules of attack against 1:1, 1:2 , faking against 1:1 ,1:2

- The distance of the defence player
- The position of the defence player
- The physical characteristics of the defence player
- Fakes -starting, running, with ball, without ball, changing direction
- Different passing techniques –from field, jump pass
- Positioning
- Blocking

2. Positioning

3. Group tactical elements

- Changing position, crossing
- Blocking, freeing oneself, running in, running out

4. Team tactical elements

- Static attack
    a) Waving/Contra waving to create a numerical advantage
    b) Waving to gain space
- Combined attack
- Mobile attack

Theoretically, handball is a team sports, hence individual, group and team tactical elements are fundamental to the success of any given team. The individual player is part of a bigger system; he has to accomplish different tactical tasks by carrying out complex activities during the game. The game situations are not constant; the players must carry out their activities in changing and different circumstances for the sake of the team and are responsible for their own activities.

Hence, it is of utmost importance for a player to be able to react to different tactical situations fast and act accordingly. In game situations, any given task is solved via tactical actions. Tactical actions are meant to be actions with different alternatives, where the player must choose the „good" solution –also, good tactical performance is not viable without adequate technical and physical preparedness. If any of these three elements (physical, technical, tactical preparedness) is missing, the attempt to score a goal will fail.

The game consists of game situations that the players must solve by different actions and the combinations of different actions. By delivering, we mean linking the different less or more complicated physiological and motor processes that lead to successfully solving a given task in a given game situation.

Thus, tactical thinking is of utmost importance in handball.

Tactical „delivering" has the following phases:

1. Perception and analyses of a given game situation that results in the recognition of a possible chance.
2. Accomplishing the tactical tasks, that results in the imagination of the solution, the decision-making process.
3. Carrying out the selected solution that results in the effective playing activity.

In solving game situations, two factors are crucial

→ Timing: when to react

→ Content: how to react

From this very respect the optimum situation is, when the structure of the movement is only partially automatic, thus the movement can be adapted to the different situations. Hence, automatisation and adaptation do live next to each other.

In case of a player, thinking is the leading factor that is followed by the realization of the movement.

The principles of attack against set defence:

- Putting pressure on the defence player (preparation phase)
- Gaining space and dynamical advantage –the positioning of the defence
- The optimal use of the applied tactical element –both with and without ball
- The different forms of passes before concluding the attack, coordinating the time and speed of the attack

A tactical plan should consist of an appropriate mix of the elements of static attack, combined attack and mobile attack. The tactical potential of a team is the continuous play by linking the different tactical elements to each other in an effort to create opportunities to endanger the goal and the ability to constantly reproduce these opportunities. The teams put together the different group and team tactical elements in a way that provides an adequate number of alternatives that can be applied against the different defence tactics.

Results and Discussion

In this paper I will analyse the different attack solutions (group and team tactical elements) against set defence. My first hypothesis was that the majority of the scores in any given match results from attacks against set defence. This hypothesis was confirmed by the statistical analyses of the Men's WChs and ECHs during the period of 2003-2012. Besides the statistical analyses, I will show the 7-8 individual, group and team tactical elements most commonly used, and movements against set defence during the period of 2003-2012 by using tactical graphics.

The teams covered by the thesis:

Russia Croatia France Sweden Germany Spain

The championships covered by the thesis

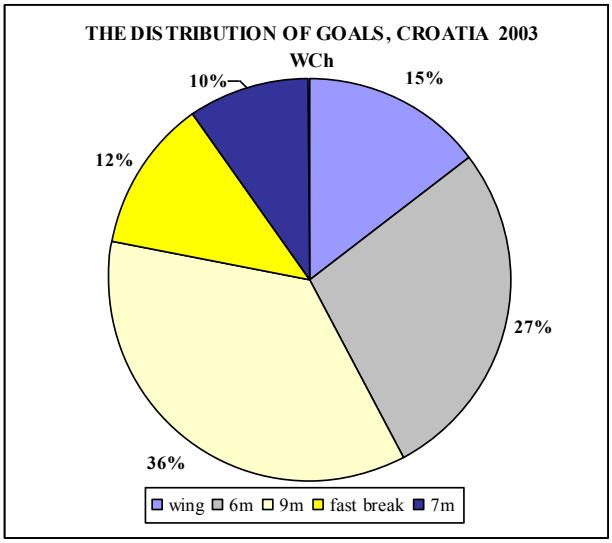
2003 WCh 2004 ECh 2011 WCh 2012 ECh

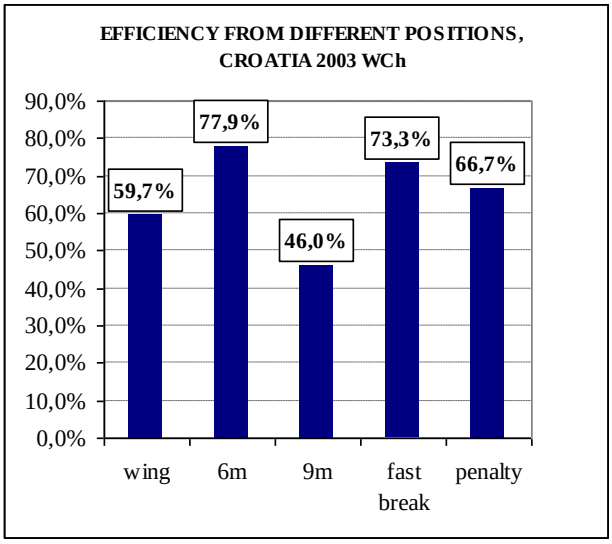
Regarding the national teams under scrutiny, I chose the leading teams in the world and took into account the special features of the different schools, their changes and developments. I aimed to understand the reasons and motives behind the changes.

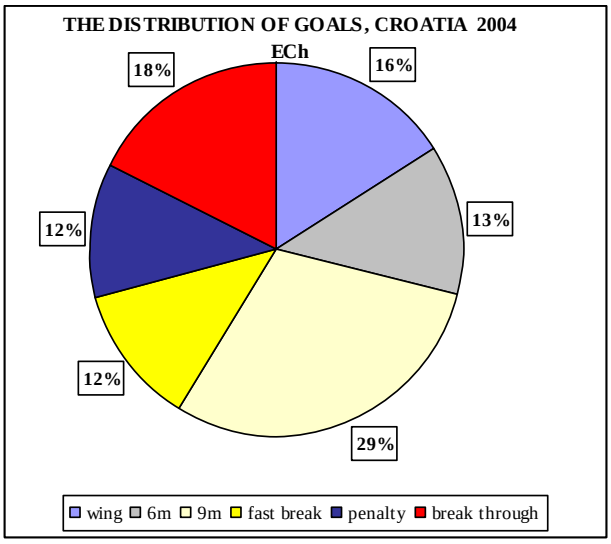
Croatia:

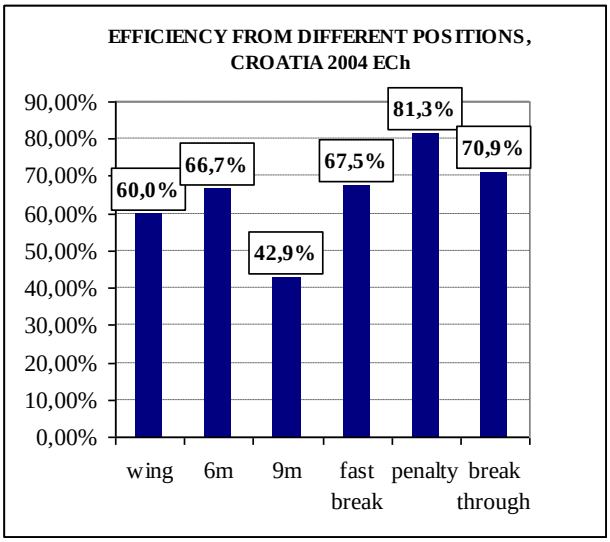
The Croatian team consists of excellent players; their play is based upon the traditional Yugoslav school. At the 2002 ECh the team did not performed quite well, the main reason being the lack of unity. The team finished in 6th place, after being defeated by the German, the French and the Yugoslav team during the group matches. After changing the coach and employing some young but highly talented players, the team turned into a solid, strongly unified team and got the gold medal at the 2003 WCH. The team members played in leading European and Croatian clubs, and the coach could use excellent, experienced players in all posts. At the 2003 WCH right wing Dzomba and the playmaker Balic were both picked to the All Star team, the latter won the Player of the Year title in the same year. In 2004 the team clinched the 4th place in the ECH, and won the Olympic gold medal in Athens.

1. Graph: Croatia: the distribution of goals and efficiency 2003-2004









Results: 2005 WCh: 2. place, 2007 WCh 5th place, 2011 WCh: 5th place, 2006 ECh: 4th place, 2008 ECh: 2nd place, 2010 ECh: 2nd place, 2012, ECh: 3rd place, 2008 Olympics_ 4th place

Regarding group tactical elements against set defense they used two - or three players combinations in position play and running in were the most commonly used team tactical elements. The Croatian team had excellent back players: Lackovic, Valcic and Metlicic. Their efficiency against set defence at the 2003 WCH was 211/97/46%, meanwhile at the 2004 Olympics the average score was 19.1 goals per match and their efficiency 38%.

At the 2011 WCh their efficiency stood at 141/60/43%, while in 2012 they scored 125/48/38%.

A prominent player of the new generation is Kopljar, 20/11/59 %, meanwhile the most effective player of the older generation was Lackovic 40/18/45 %. The performance of Buntic 21/6/ 28%, and Duvnjak 27/7/26% lagged behind, both players performed weaker compared to the previous championships.

Due to the high activity of the back players and the consequent reactions by the defense, wing players and pivots also proved to be highly efficient; they efficiency ratios came out at 30%, and 61% respectively during 2003-2004. Moreover, 40% of the scores came from the wing and pivot positions. The same tendencies continued in 2011-2012, in terms of the wing players the efficiency was 67/47/66% and 64/40/63%, respectively. Strelek (72%), and Cupic (70%) were especially efficient. Concerning the pivot position, one of the world's best pivots, Vori scored 52/39/75% in 2011, but the defense systems applied in 2012 against the pivot proved very effective. Thus, Vori's efficiency ratio fell back to 7/10/58%.

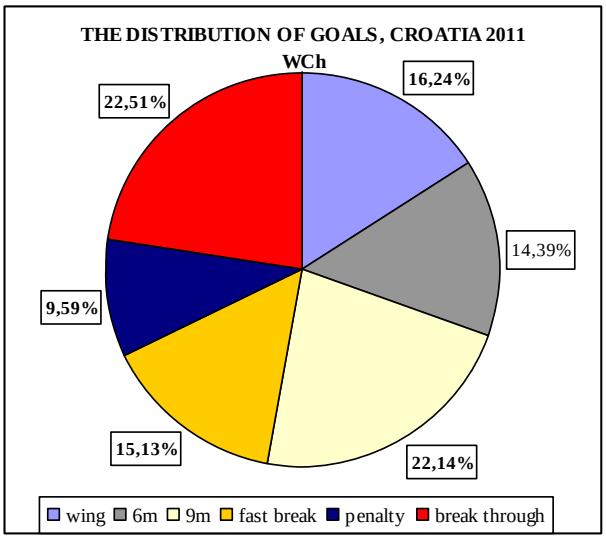
In 2003 and 2004 relatively few attacks were concluded by break-through (6% on average), but the efficiency ratio was strong at 91%. In 2011-2012, the proportion of break-through attacks doubled to 12%, and was concentrated to the back positions. The efficiency ratio remained high at 90%.

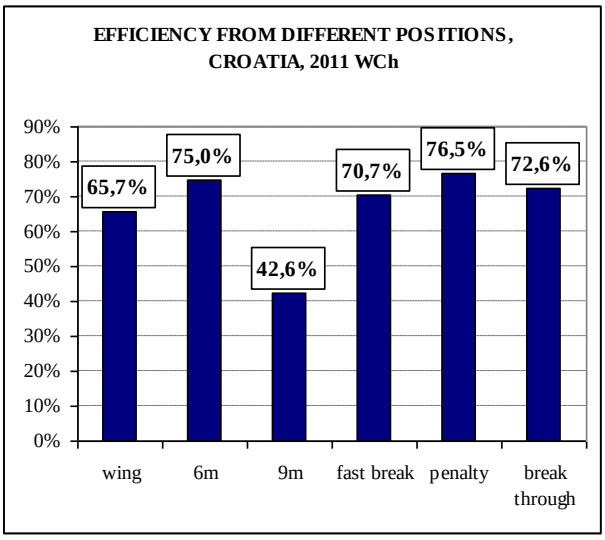
The Croatian players are characterized by a high level of physical and athletic fitness, with outstanding running speed and jumping power. Their understanding of the game is based on versatility, they are able to employ combined attack systems in many different ways flexibly adapting to the changing defence systems of the opposing team. Because of their ability to change the rhythm of the attack, they are able to dominate the factors of time, space and the dynamics within a given attack and throughout the game.

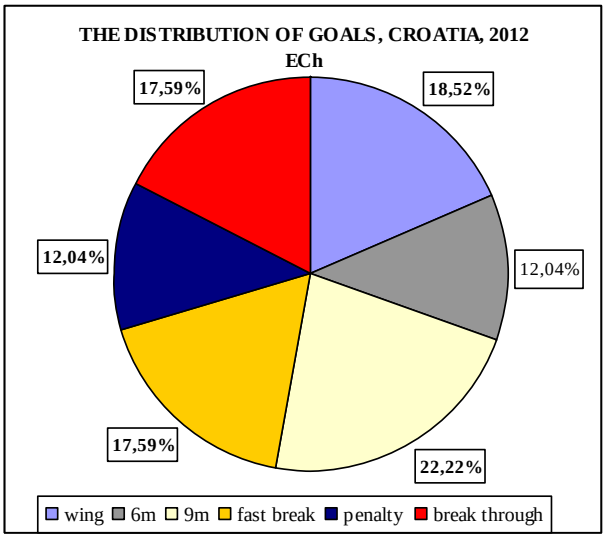
The Croatian players' technical preparedness was excellent, and it made them able to utilize the many variants of the basic movements. A crucial element of their play is the excellent CB, Balic, with his special technical and tactical knowledge and outstanding efficiency. The team is theoretically very well prepared and creative. Moreover, the individual players' ability to undertake the responsibility in crucial positions is outstanding. Their psychological state can be characterized by the high level but well-contained aggressiveness, and self-confidence, the high level of awareness and deliberate will to win.

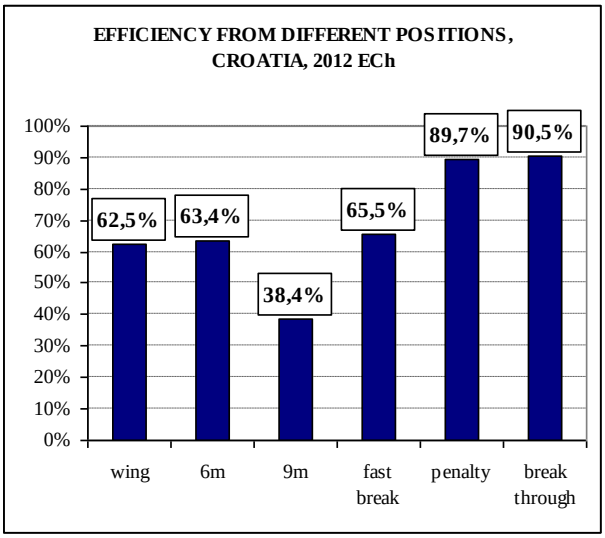
The team reached excellent results under the leadership of the well-respected Cervar, his successor Goluza after taking the position has continued the work on the basis of the tradition of the Yugoslav handball school

2. Graph: Croatia: the distribution of goals and efficiency 2011-2012









France:

The team that participated of the examined WChs and EChs was built on the former team that clinched the gold medal in the 2001 WCH. France remained in the elite between 2002-2004, they finished the 2002 ECH at the 6th place, got the bronze medal at the 2003 WCH, finished at the 6th place at the 2004 ECH, and their final ranking was 5th in the Olympics in Athens.

The French team was characterized by a high degree of motivation and self-confidence, they played very fast handball with virtuoso elements. In their attack tactic, they strongly depended on group tactical elements (2 and 3 players) with many different alternatives relying on the intensive use of piston movements and parallel thrust. Their group offense play was characterized by a high level of improvisation.

After winning the gold medal in 2001, the weaker performance during the next years can be attributed to the lower efficiency of conclusion of attacks compared to their competitors.

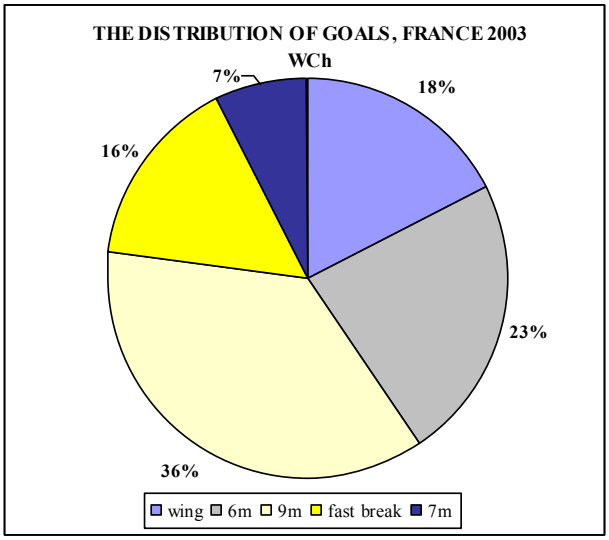
2003 WCH	**2004 ECH**
GERMANY 59,80%	RUSSIA 59%
CROATIA 59,08%	CROATIA 57%
RUSSIA 58,31%	GERMANY 55,2%
SPAIN 58,30%	***FRANCE 53,69%***
FRANCE 56,30%	SPAIN 49,85%

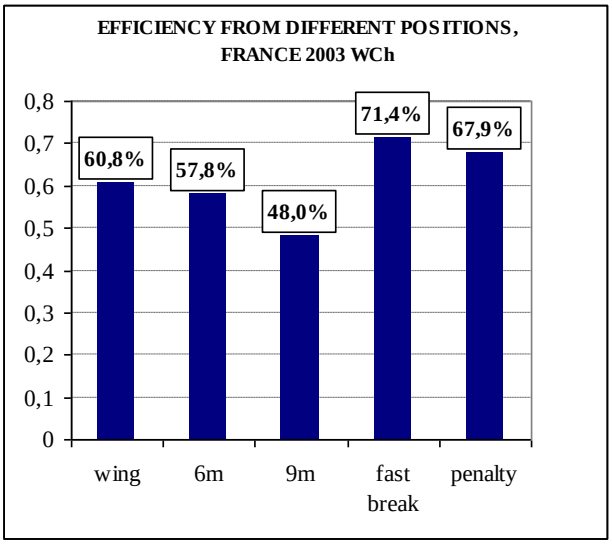
In their attack against set defence, they relied excessively on the back players (Fernandez, Casal, Karabatic, Burdet). At the 2003 WCHh back players scored 36.55% of the goals; the efficiency from this position being 196/94/48%. The efficiency ratio of the back players declined slightly in 2004 in tandem with the lower ratio of shots from the back position: (148/59/39.86%), and 31% of all goals respectively.

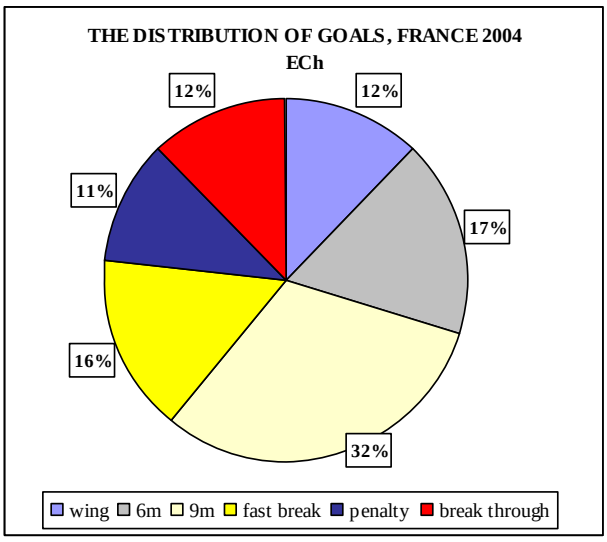
The pivot position was another strong point in France's attack at the 2003 WCH. Although only 17% of all attacks was concluded from the pivot position, the efficiency ratios of the pivot players were excellent (85% on average, B.Gille 22/15/68%, C.Kempe 10/9/90%). In the 2004 Olympics the efficiency declined (56%) but the ratio of attacks concluded from this

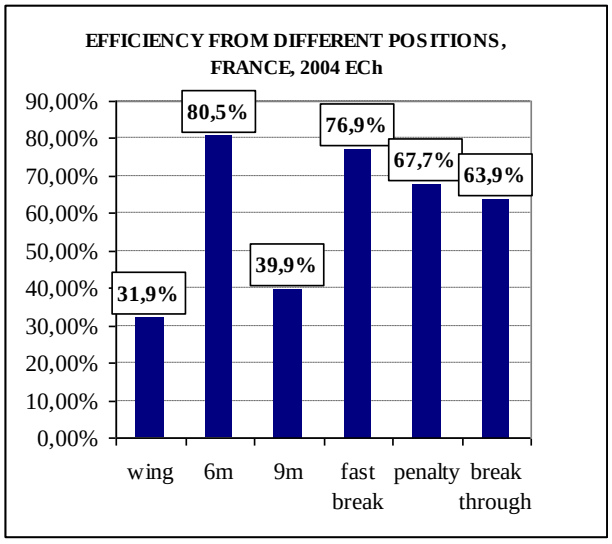
position inched up to 25.3% as a result of the CB and LB players running in between the defenders (G.Gille 25/19/76% Karabatic 11/6/55%). Breaking through was less often employed by the French team (6-12%), but the efficiency of shots following break through was satisfactory (70%).

3. Graph: France: the distribution of goals and efficiency 2003-2004









Results: 2005 WCh: 3rd place, 2007 WCh 4th place, 2011 WCh: 5th place, 2006. ECh: 1st place, 2008 ECh: 3rd place, 2010 ECh: 1st place, 2012, ECh: 11th place, 2008 Olympics: 1st place

At the 2011 WCh, the most efficiently employed tactical element in offense play was the breakthrough (12% of all concluded attacks and 89% efficiency, Fernandez 10/10/100%, Barachet12/11/92%). From pivot position, they concluded 14% of all attacks with a 73% efficiency ratio (B.Gille 29/23 79%); meanwhile from the wing positions 11% of the attacks were concluded with 59% efficiency.

Nonetheless, the majority (38%) of the attacks was concluded from the back position with 54% average efficiency (Karabatic 55/32/58%, Accambray 39/20/51%, Barachet 22/12/54% - this represents a clear and visible improvement compared to the earlier period. The optimal area for scoring from the back position was build via the group tactical element of changing position between 2-3 players. The employed tactical elements were the variations of long preparations, pivot preparations, short crossing, back crossing and the flexible counter movement variations of all of them.

The team tactic of France was built upon the different elements of position play, most of the movements starting from the CB position. Moreover, they regularly run in between the defenders.

The weak ranking at the 2012 ECH might suggest, that it had been decided that instead of going for the best possible result, they took this championship as an opportunity to practice and develop the team ahead of the Olympics (where they finally got the gold medal). Hence, the 11th place did not reflect the true quality and power of the team, and it is confirmed by the different efficiency ratios.

Back positions: 45% of all concluded attacks, 132/49/37% efficiency

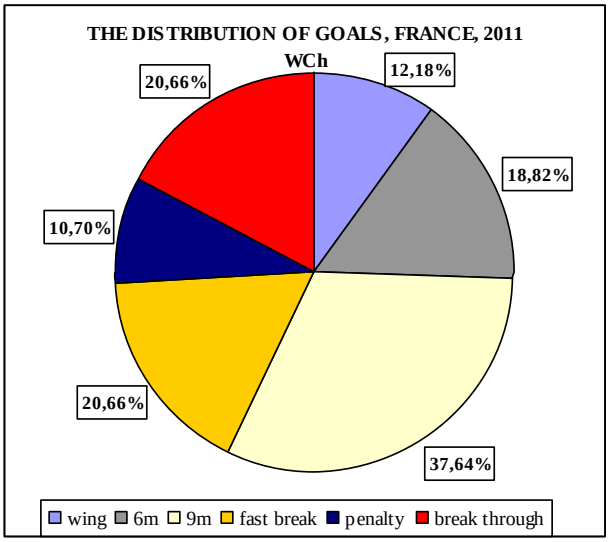
Break through: 5% of all concluded attacks 14/11/79% efficiency

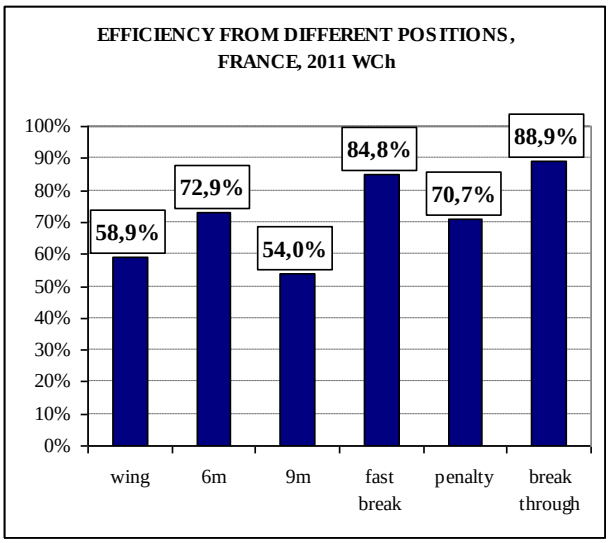
Pivot: 10% of all concluded attacks, 30/21/70% efficiency

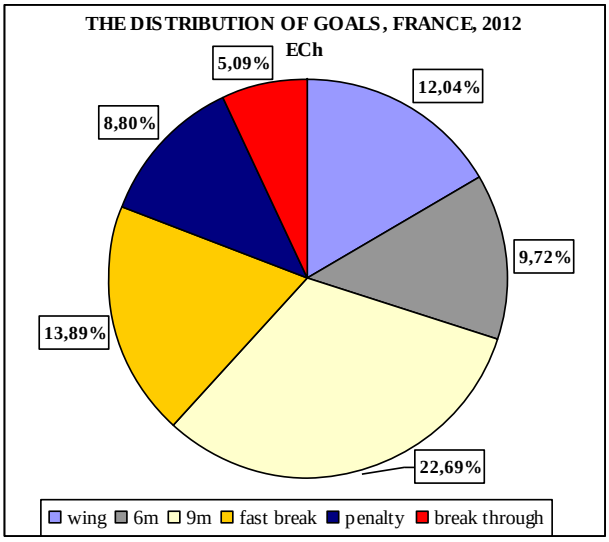
Wing: 17% of all concluded attacks, 52/26/50% efficiency.

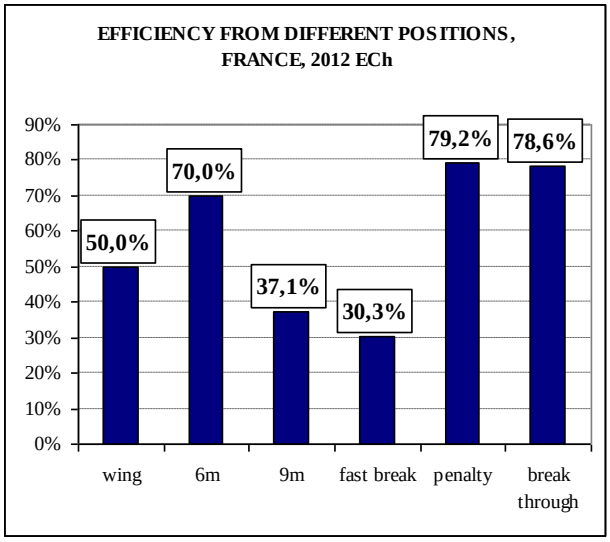
The gold medal at the London Olympics marked the end of a long and highly successful period, and reflected the work of the excellent coach C.Onesta, with a highly valuable philosophy of handball, and the high quality of all other members of the team that managed to build the most successful French handball team of the recent past.

4. Graph: France: the distribution of goals and efficiency 2011-2012









Sweden:

The Swedish team had been the hallmark of the Scandinavian handball school till winning the 2002 ECH, with many outstanding players (Wislander, S.Olson, P.Carlén, Lövgren,Vranjes) and with a coach that created a special philosophy, and style: B. Johansson. However, the results in 2003 and 2004 (WCH: 13 rd place, ECH 7th place) meant that the team could not qualify for the Olympics Games, and highlighted the need for a generation change.

The period was characterized by the extremely high efficiency of concluding the attacks; the 60.7% efficiency ratio was the highest among all participating teams. Moreover, the Swedish team was the most improvisative in its attacks

Concerning team tactical elements, the Swedish team employed many different elements and flexibly adapted them to the different defence systems of the other teams (crossing, changing position, changing bias, long passes, running into double pivot position), that resulted in scoring opportunities and the team used these opportunities very efficiently.

Due to the superior technical abilities of the players, the dynamics of the play could be raised to the highest possible level, increasing the attractiveness of their play.

Concerning in-width play the Swedish team proved to be the most effective thanks to the excellent play of the pivot and to the regular running into the defense by the back players. Because of the parallel movements of the wing and back players, they managed to widen the game space significantly. The average time of attack was the shortest for the Swedish team, as an average they concluded their attack after 2-3 passes. After a free throw the attack time was even shorter, they managed to develop a scoring change after 1-3 passes.

As far as the 2003 WCh is concerned, the proportion of concluded attacks by through shots was lower compared to the competitors. Only Lövgren (CB, LB) and occasionally K.Anderson (RB) carried out through shots (116/47/41%)) S.Olsson hardly tried through shot, but his play was very useful in terms of creating scoring chances for the wing and pivot players. .

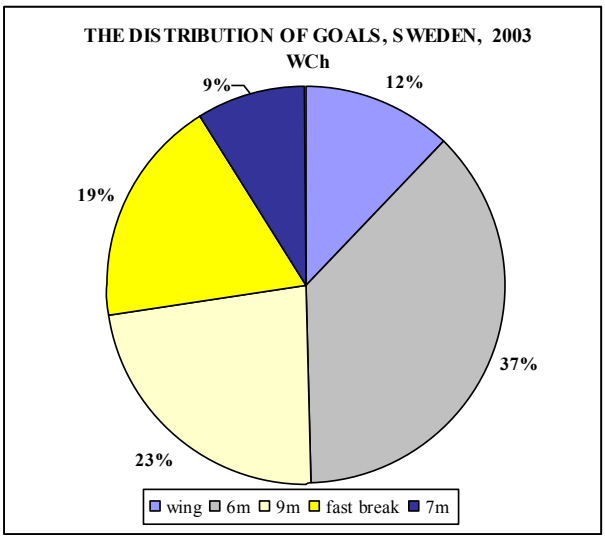
Although in modern handball a very important determinant of success is the efficiency of through shots, the effectiveness of the wing players has a significant impact on the results as well. In case of Sweden, the very low efficiency ratios of the wing players (39%, the lowest among the teams at the 1-8th places) may be another important factor behind the weak overall

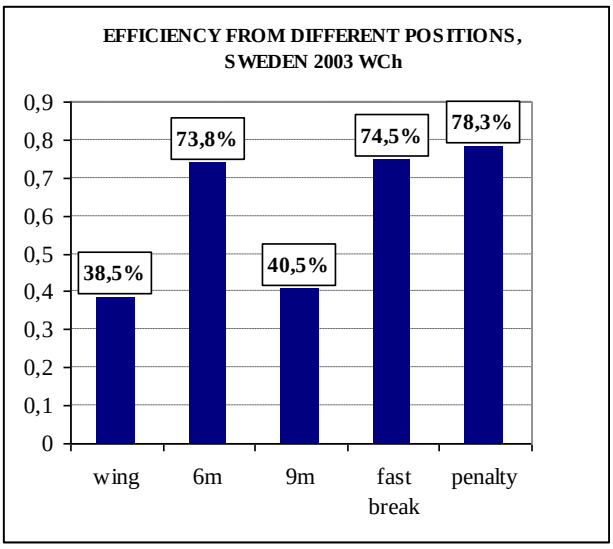
performance. Especially because the Swedish handball school is traditionally characterized by the strong and effective play of the wings.

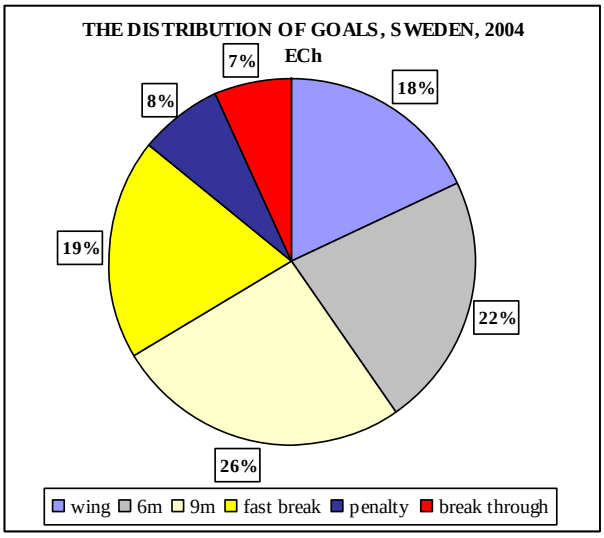
At the 2004 ECH, the Swedish team's performance, yet again proved to be a disappointment. The older, experienced players alongside with new young members finished in 7th place. The back players proved to be the weakest link, (159/55/34.59%) Only Spain and Hungary proved to be less effective from the back position. They concluded their attacks by break through fewer compared to the earlier period (seven matches 7/14/82%), but the efficiency of the wing players improved quite significantly. (Petterson and Källman 61/38/62.3%)

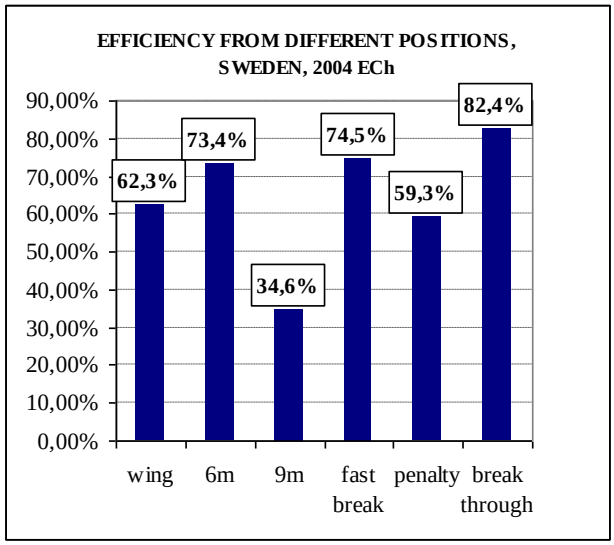
22% of all concluded attacks were from the pivot position, both Wislander and Alhm performed outstandingly: (18/11/61%) and 18/14/77%) respectively, but also counting the scores from running into the defence the overall efficiency ratio rose to 74%. The bottom line is that the Swedish team lagged behind its competitors in many aspects, and this tendency continued during the upcoming period as well.

5. Graph: Sweden: the distribution of goals and efficiency 2003-2004









Results: 2005 WCh: 1st place, 2007 WCh: not qualified, 2011 WCh: 4th place, 2009 WCh 7th place, 2008 ECh: 5th place, 2010 ECh: 15th place, 2012 ECh: 12th place, 2008 Olympics: not qualified

Following the weak performance during the previous years, the Swedish team finally managed to catch up with the competitors at the 2011 WCH because of mixing the old traditions, the philosophy and the basic tactical elements of the previous generation with the fast, dynamic style of the current handball. The overall efficiency of the Swedish team was 57%. They concluded 40% of all attacks from the back positions with a 41% efficiency ratio. O.Carlen (60/31/51%), DuRietz (31/13/41%) and Doder (41/15/36%) performed quite well, but K.Anderson (15/5/33%) performed weaker than expected. Moreover, the Swedish team

was traditionally characterized by the excellent performance of the wing players, but at the 2011 WCH there was a big disappointment in this respect. Only 17% of the concluded attacks came from the wing positions with an 81/45/56% efficiency ratio; Källman showed the best performance of the wing players. (33/21/63%)

The pivot position was the most effective position during this WCh, although only 9% of the attacks were concluded from the pivot position, both Gustafsson and Arrhenius were extremely efficient (10/8/80% and 15/12/80%, respectively).

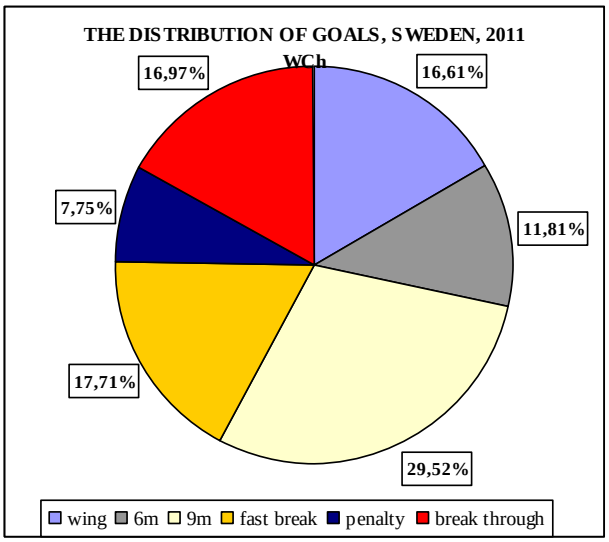
Although the target was to finish the WChwithin the podium, they lost the most important matches against the Danish and the Spain team with a narrow margin.

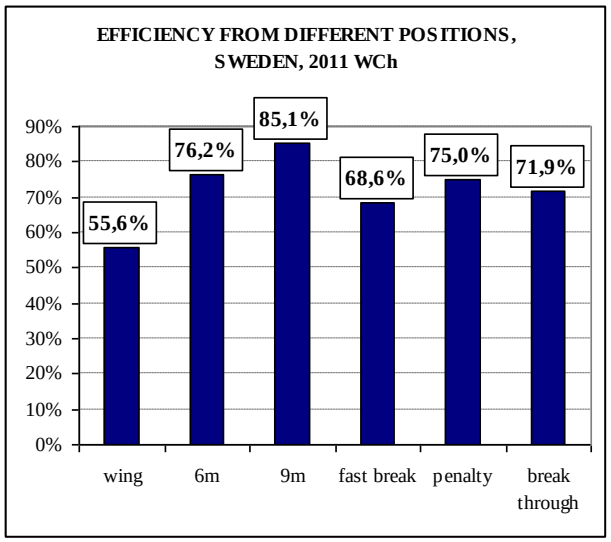
At the 2012 ECh the Swedish team slipped further back into the 12th place.

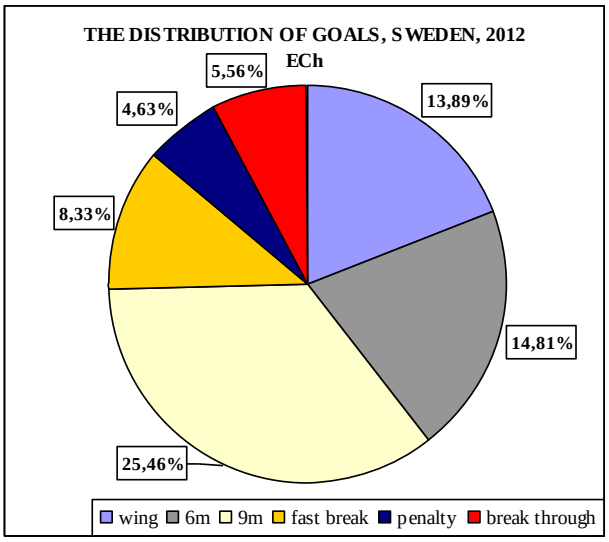
The attacks concluded from the back positions amounted to 45% of all scores, with a 126/55/44% efficiency. 16% of total scores belonged to the wings (44/32/15%), meanwhile break through accounted for 7% of total concluded attacks with 19/126/63% efficiency. The main problem in their attack play was that they were not able to continue the play if after a tactical element supposed to create a scoring change for the back players they were blocked by the defence. In those cases, the Swedish team committed many technical faults (inaccurate passes) as a result of which the opponent team managed to gain possession of the ball, and carried out fast breaks.

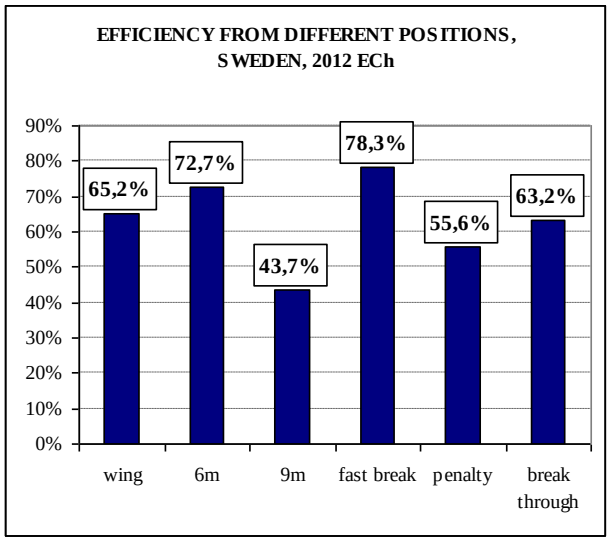
Following the unstable and volatile performance in the preceding period, they managed to get the silver medal at the 2012 Olympics. The result is a clear step forward, but the bottom line is that additional effort is needed to keep the he Scandinavian handball school and the Swedish handball at the top.

6. Graph: Sweden: the distribution of goals and efficiency 2011-2012









Russia :

At the 2003 WCH, the strongest position against set defence was the pivot position, (Torgovanov, Chipurin) with 112/74/66% efficiency. At the 2004 ECH due to the injury of Torgovanov, the emphasis shifted to the back positions, a bigger portion of all attacks were concluded from the back positions. Nonetheless, the young pivot, Chipurin managed to substitute Torgovanov quite well (59/38/ 65%).

During these championships, it was an interesting trend to observe, that the Russian team used the wing running in and the two pivot play combinations more frequently.

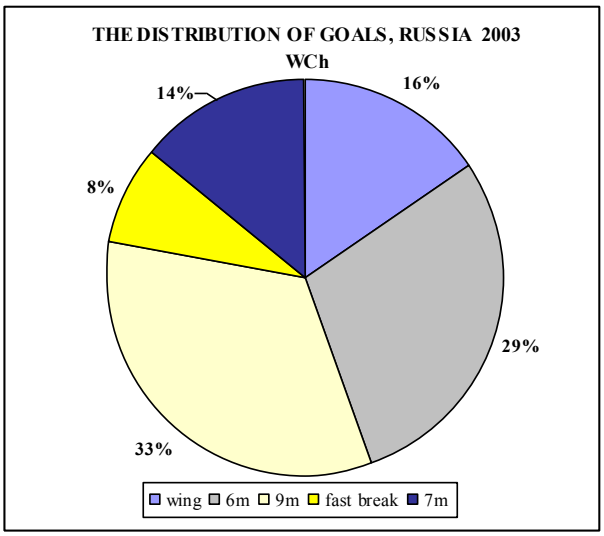
At the 2003 WCH 24% of all attacks were concluded from the wing position with a 69% efficiency ratio, but these figures declined to 14% and 59% respectively in 2004. Among the big names at the 2004 ECh the Russian team proved to be the less active and less effective from the wing positions. (Krivoshlikov, 19/14/73%, Kokcharov,18/8/45%).

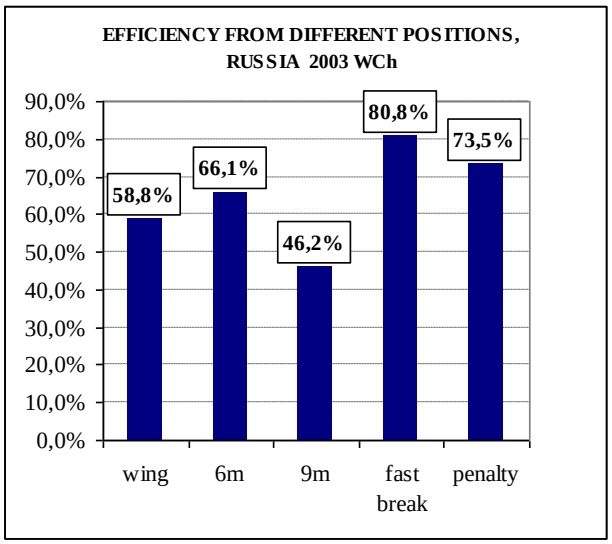
The Russian team that traditionally had very strong back players (Rastvorcev, Tuchkin, Pogorelov) not surprisingly concluded most of its attacks from the back positions and relied heavily on this position when building up attack against set defence.

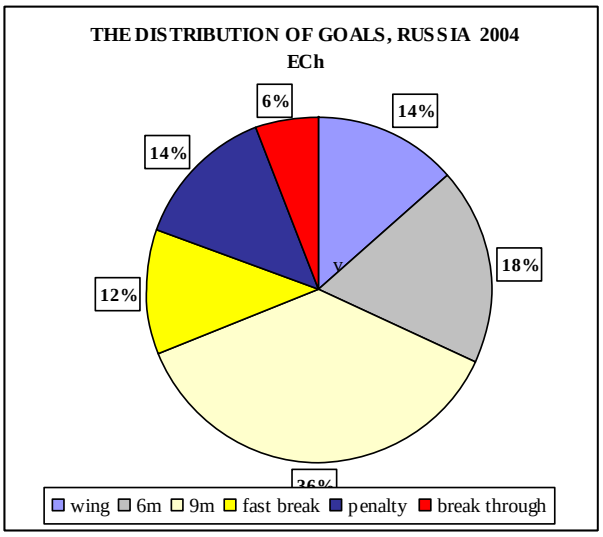
At the 2003 WCH and 2004 ECh the average number of scores from back positions was 19.5 and the efficiency ratio was 45.3%.

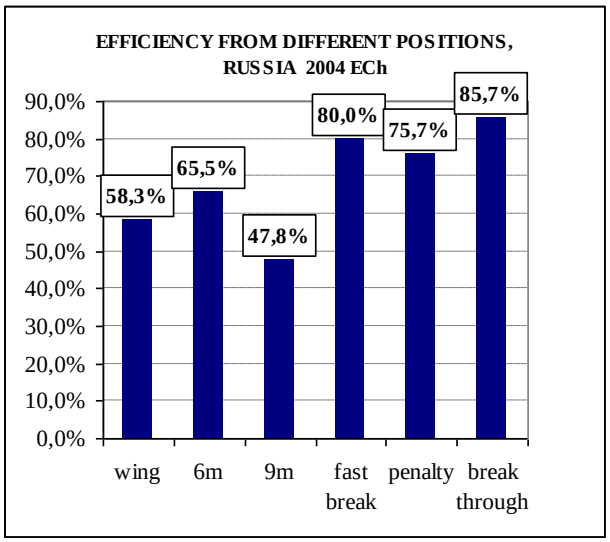
However, the passivity of the RB was rather surprising; from this position they mainly operated by break through. Thus, the conclusions of the attacks were centered upon the LB and CB positions (95%). Compared to the previous period, the portion of concluded attacks via break through declined to as low as 5%, but the efficiency was satisfactory at 86%.

7. Graph: Russia: the distribution of goals and efficiency 2003-2004









Results: 2005 WCh: 8th place, 2007 WCh: 6th place, 2011 WCh: not qualified 2009 WCh: 16th place, 2006 ECh: 6th place 2008 ECH: 13th place, 2010 ECh: 12th place, 2012, ECh: 15tht place, 2004 Olympics: 3rd place, 2008 Olympics:6th place, 2012 Olympics: not qualified

At the 2012 ECh the team played only three matches during the preliminary round

(RUS-HUN 31-31, RUS-FRA 24-28, RUS-ESP 27-30.)

At that year, the proportion of concluded attacks from the wing positions was the highest among all the participating teams (27%, 58% overall efficiency, Kovaljev (11/7/63%), Dibirov (6/3/50%).

The back players frequently got a scoring opportunity from the wing position resulting from wing running in -Rastvorcev (3/2/66%), Igropulo (4/2/50%)-, but the pivot players frequently concluded the attacks from the wing positions as well Chipurin (6/2/33%)

They heavily relied on the back position as well, 37% of the attacks were concluded from the back positions, but the efficiency fell back to 37% from 45%: Rastvorcev (10/3/30%), Starykh (8/2/25%), Shelemenko (10/4/40%), Igropulo (16/6/37%).

The weaker performance of the back players was a decisive factor of the disappointing overall performance of the Russian team

The pivot remained a key position, the pivot player concluded 10% of the attacks, and the efficiency was extraordinary (93%, the highest figure among the participating teams)

The performance of the experienced Chipurin was outstanding, (9/9/100%), but Chernoivanov (3/2/75%) and Atman (2/2/100%) also contributed positively to the overall performance of the team.

The ratio of concluded attacks from break through inched up slightly to 7%, and although they did not rely heavily on this type of conclusion, they did it quite efficiently (9/9/100%)

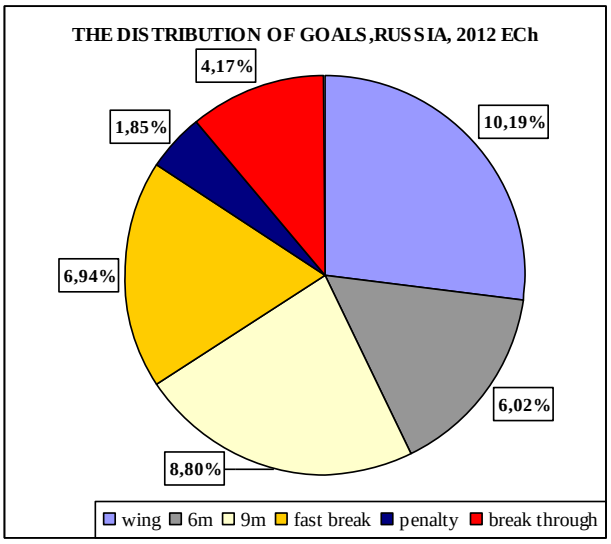
The Russian team has been struggling since the 2000 Olympics to find the balance between the young and the experienced players. The team and more generally the Russian style is characterized by the high-level physical performance, they are the embodiment of „power" handball. Concerning technical elements, the players are adequately prepared, but virtuosity is not a feature of the Russian team. The individual play is not common and is subordinated to the team's success. The attack style of the team is characterized by simple moves and simple tactical elements, that puts great emphasize on the individual roles and plays. The main tactical elements used by the team are waving-contra waving, shooting over the screen, pick and roll, and running in by the wing or the CB player. Maximov's professional experience and his charismatic personality was a great value, but it must be admitted that the 6th place at the 2008 Olympics marked the end of a successful period.

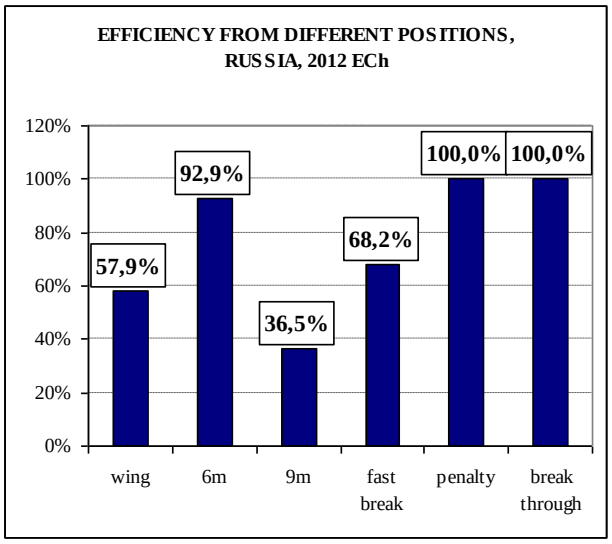
The reasons behind the weaker performance may be that they failed to change the conservative philosophy and failed to adapt their technical and tactical repertoire to the changing requirements. They failed to react to the trend that in today's modern handball the defence systems and offence tactics got more flexible, and the quality of defence improved a

lot. Concerning attack, players turned out to be technically and tactically more qualified, in attack tactics flexibility, mobility and variability got higher.

Nowadays, it is not enough for the success to have excellent „defence" and separately excellent „attack" players; nowadays-fast handball requires complex players that are good both in defence and in attack. The bottom line is that to catch up with the leading teams the Russian handball school should be reconsideredand should adapt to the changing needs of modern handball.

8. Graph: Russia: the distribution of goals and efficiency 2012





Germany:

The excellent results of the German team were based on the excellent players playing in the Bundesliga, (Kretschmar, Stefan, Baur, Zerbe, Fritz etc.) and the superior coaches (Brandt, Thile). The team that was built on Lemgo players and had a good mix of young and experienced players. They showed the most stable performance at the 2004 ECh, where they won the gold medal.

Learning the lessons from earlier finals, they showed a lot of discipline, precise but at the same time dynamic play both in attack and in defence. The organization of the attacks was extremely fast and efficient; the conclusion of the attacks against set defence was concentrated on the pivot and RW positions. The main features of their attacks against set defence are the high level of discipline, dynamics and aggressiveness.

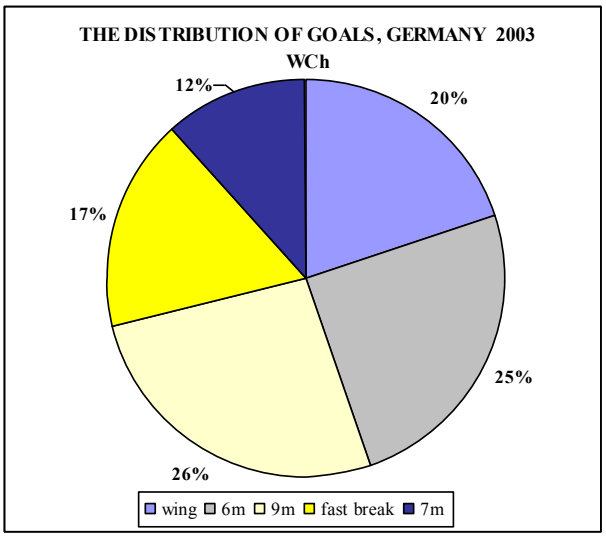
Against set defence, they employed fast, precise attack elements and alternatives with few passes.

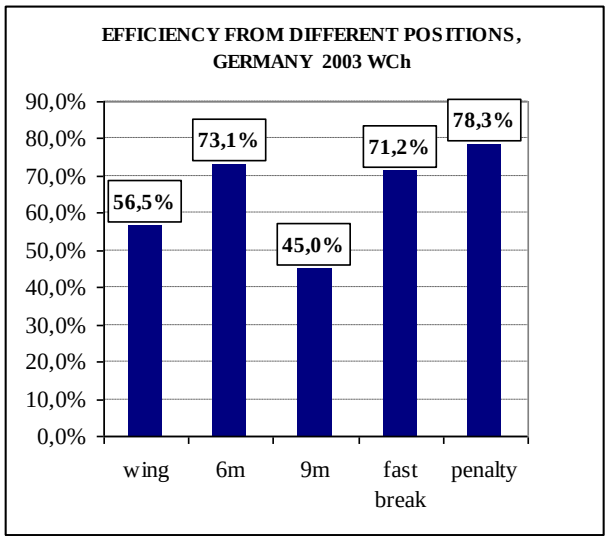
Contrary to the previous period the conclusions of the attacks were not entirely concentrated on the wing positions (Kretschmar, Kehrmann,), but taking advantage of the weaknesses of the different defence systems (6:0, 5:1); they proved to be very efficient from the back and pivot positions as well.

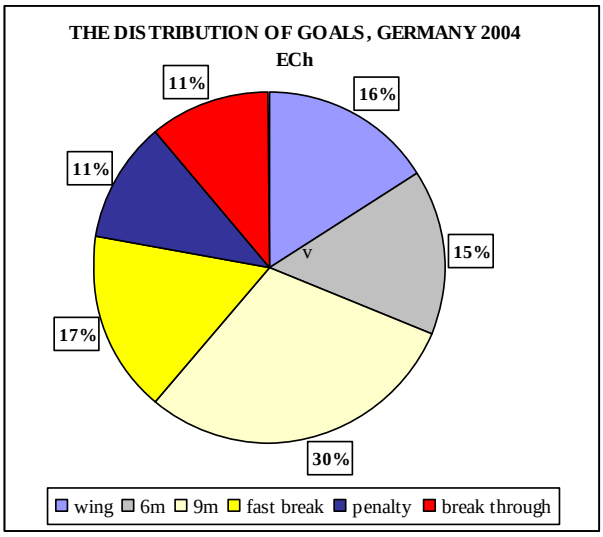
At the 2003 WCH (2nd place), the German team was the one that showed the most targeted and conscious running in elements against 6:0 and 5:1 defence. The proportion of running in attacks was 25% with 73.8% efficiency.

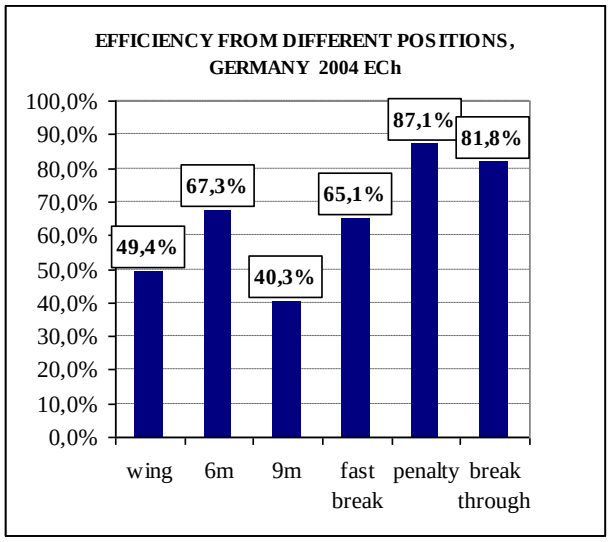
At the 2004 ECH, they used different free throw elements very effectively.

9. Graph: Germany: the distribution of goals and 2003-2004









Results: 2005 WCh: 9th place, 2007 WCh: 1st place, 2011 WCh: 11th place 2009 WCh 5th place, 2006 ECh: 5th place 2008 ECh: 4th place, 2010 ECh: 10th place , 2012 ECh: 7th place, 2004 Olympics: 2nd place, 2008 Olympics: 8th place, 2012 Olympics: not qualified

The big dream of winning the gold medal at the 2007 WCH in German became reality; although they lost against Poland in the preliminary round (27-29) they took revenge and profiting by the advantages of the home court, they bet Poland by 29-29 at a very high standard match

After winning the gold medal in 2007, their performance got more volatile, the low point being the 11th place at the 2011 WCH. The reasons behind the weak performance can be summarized at follows:

The members of the team came from eight Bundesliga clubs, there was not one single player playing abroad. Their attacks were not as fast, dynamic and efficient as during the previous period, the opponent teams efficiently neutralized their fast breaks on turnover play; hence, they were forced to build their attacks against set defence. Their play against set defence proved less efficient.

Their tactic against set defence was based on solutions focusing on the back players (56%, Hens,34/17/50%, Glandorf,46/26/56%, Kaufman 32/17/53%). They used fast plays, few passes and frequent crossings and concluded the attacks either by break through (47/34/72%, (Glandorf 14/12/85%, Kraus 6/5/83%) or through shot (213/95/45%)

During the previous period, they managed to profit from the effective wing and pivot play. However, in 2011 only 13% (61/38/62%) of the concluded attacks was from the wing positions. The most efficient wing players were Gensheimer (16/12/75%) and Sprenger (20/14/70%). They used the pivot position for concluding the attacks less frequently as well (13%, 78% efficiency). Besides creating scoring opportunities for the classic pivot players (Preiss 26/20/76%, Heinl 13/10/76%) they concluded attacks by running in from the wing positions as well. (Klein, Spenger 10/8/80%)

The performance of the team at the 2012 ECh was extremely volatile. They opened with a defeat by the Czech team (24-27), but luckily enough the latter lost the next match, hence the German team qualified for the main round with 4 points. They luckily bet Macedonia (24-23), and showed a good performance against Sweden. (29-24). In the next round the result was a draw against Serbia, and although they played very balanced matches, they lost by small margins and finally ended up in the 7th place.

They concluded the majority of their attacks from the back positions (42%), but the efficiency deteriorated compared to the previous championships (123/46/37%).

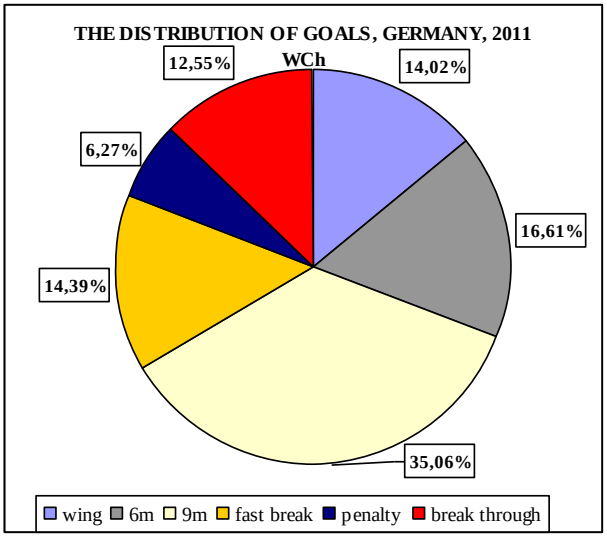
The best performance in this position was Kaufmann's (36/16/44%); he was followed by Cristophersen (20/8/40%) Glandorf (21/8/38%) and Pfahl (13/5/38%), meanwhile Hens's play was a disappointment (12/3/25%). They build more attacks to the wing positions compared to the pervious period (9%, 55/30/55%)

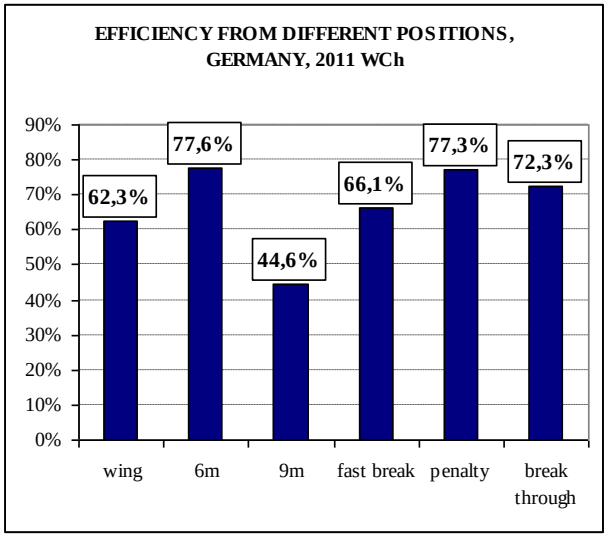
The most efficient wing players were Gensheimer (18/8/44%), Graetzki (13/7/53%), and Sprenger (11/9/81%). This time they put more emphasis on the pivots, 19% of all concluded attacks was from this position, and the efficiency can also be considered satisfactory (79% on average, Theuerkauf (21/15/71%), Wiencek (5/4/80%), and the defence specialist Roggisch (4/4/100%))

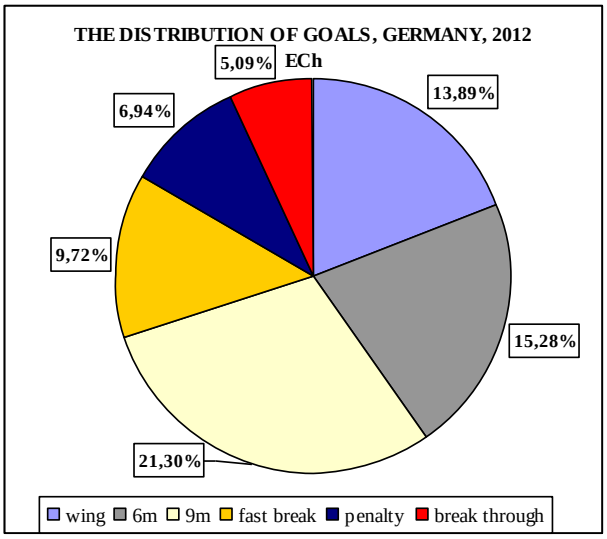
They focused less on break through, the ratio of break through scores was only 50% compared to the previous championships (295/15/5%, 73% overall efficiency).

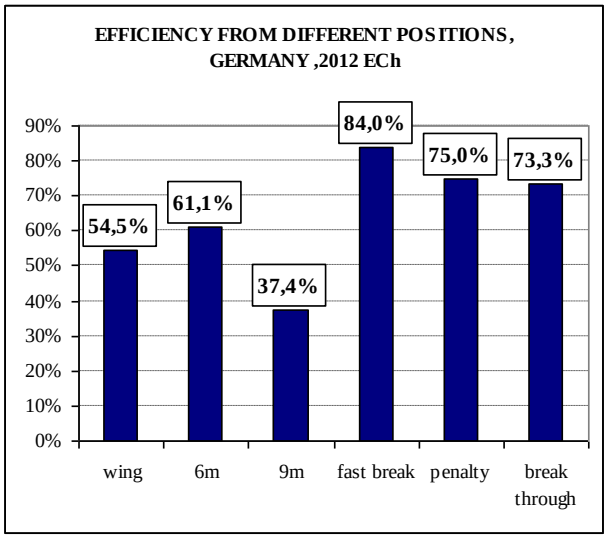
They failed to come up with new tactic neither in defence nor in attacks. The German defence was solid and well organized, accompanied with good goalkeeper performance, but their attack was too simple, and failed to put the defense under adequate pressure. They started to organize the attack mainly from the CB position, hence they attacks turned out to be easily taken and schematic. They had no effective solutions when the back players were neutralized and made many mistakes in these situations. Regarding the future, the success of the German team will depend on the creation of a more creative, flexible team with improved mobility. They should find complex players who will be efficient in continuous fast playing and adapt their attack strategy accordingly.

10. Graph: Germany: the distribution of goals and efficiency 2011-2012









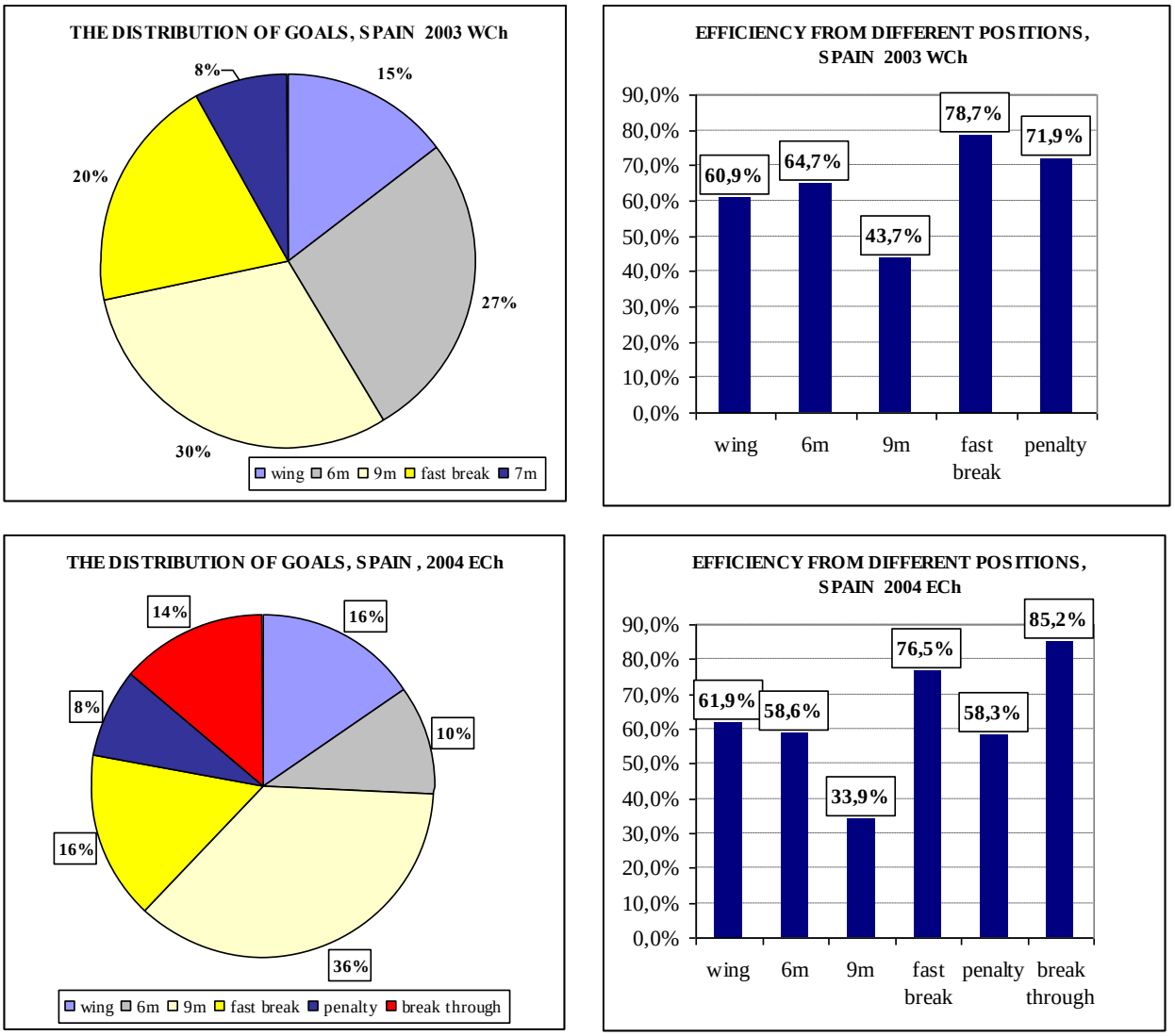
Spain:

Regarding attack against set defence, the main characteristic of the Spanish team was the high ratio of through shots; this was the team with the highest ratio of through shots during the championships (Lozano, Garralda, Belastegui, Romero, Enterrios). They finished at the 4th place in 2003, 41% of all shots came from the back positions with 44% efficiency. They got the 10th place in 2004 and the 7th place on 2004, and although the ratio of through shots remained more or less the same, the efficiency declined quite significantly to 31.3%

The frequently used the pivot position to conclude the attacks (23%, 66% efficiency), and were very effective (78%) from break through thanks to the very well faking players (Dusebajev, Entrerrios, Lozano)

They concluded 12% of all attacks from the wing positions with a 52% efficiency ratio. Many passes characterized the team attack; they used 2-3 group tactical elements to build the team attack.

11. Graph: Spain: the distribution of goals and efficiency 2003-2004



Results: 2005 WCh: 1st, 2007 WCh: 7th place, 2009 WCh 9th place, 2011 WCh: 3rd place, 2006 ECh: 2nd place 2008 ECh: 9th place, 2010 EhH: 6th place, 2012 ECh: 4th place, 2008 Olympics: 3rd place.

The Spanish team showed a clear improvement in 2011, the overall efficiency ratio of the attacks rose to 58%. 38% of all concluded attacks was from the back positions with 41% efficiency: A. Entrerrios (49/23/47%), R. Entrerrios (26/16/61%), Martinez (21/9/42%) Iker Romero (29/10/33%). The latter spent less time on court and his performance can be regarded as relatively weak. The traditionally good wing position did not disappoint either, 17% of all concluded attacks came from the wings, the efficiency ratio being 57%. Rocas performed outstandingly (26/19/73%).

They concluded 14% of their attacks from the pivot position, that proved to be the most efficient position (70% overall efficiency, Aginagalde (35/26/74%) and Garabaya (12/8/67%).

They employed the break through less frequently and mainly from the back positions (8% and 67% efficiency).

Although their dream was to play in the final, they lost against Denmark in the semi final (ESP-DEN 24-28), but finally managed to win the bronze medal by beating Sweden (24-23).

At the 2012 ECh the Spanish team yet again performed well and managed to stay among the leading teams by winning the 4th place. The overall attack efficiency (62%) was the second best of all the teams. They used the back positions to conclude the attacks less frequently (30%) and focused mainly on the LB and CB positions with 41% efficiency. The two Enterrios played with 30% efficiency, meanwhile Sarmiento (17/9/53%); Canellas (17/10/59%) and Maqeda (12/6/50%) who spent more time in play were good also.

The wing play of the Spanish team was the best among all the teams; they concluded 23% of their attacks from this position with a strong 85/63/68% efficiency. Ugalde (17/12/71%) and Tomas (21/13/61%) concluded the attacks built on changing positions and waving very efficiently.

In the pivot position Aginagalde played the most (20/15/75%), but taking into account the running in from the CB and LB position as well, the efficiency of the pivot position was 68% and16% of the attacks were concluded from this position.

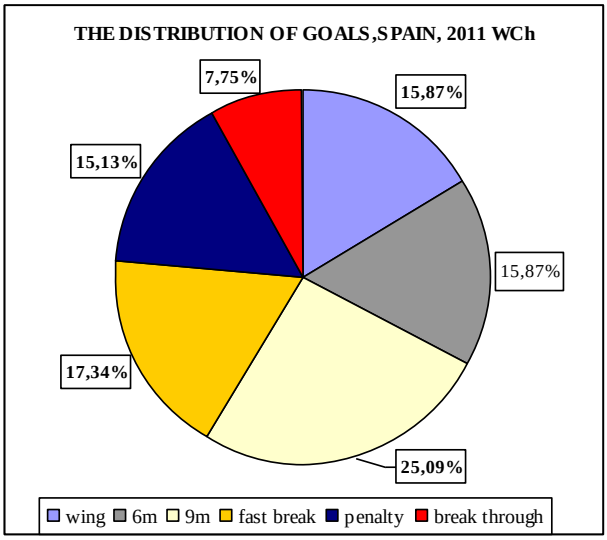
They relied less on break through (6%) with 78% efficiency.

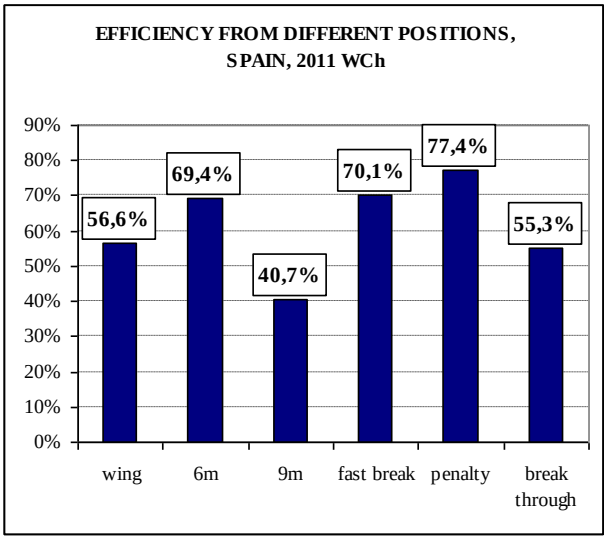
The Spanish team's performance was stable until the main round, in their attacks against set defence they used tactical elements based on different variations, and applied them to the different defence systems efficiently. In the semi final, they played a very exciting match with

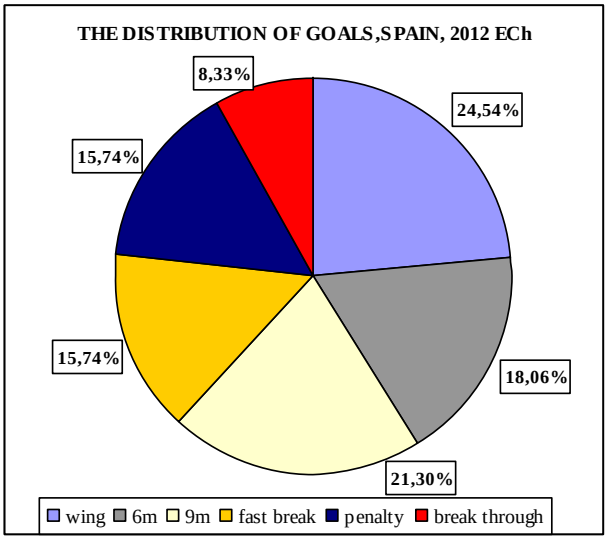
Denmark (who finally clinched the gold medal) and lost by one goal only (24-25); they were beaten by 3 goals by the Croatian team in the bronze medal match (31-27)

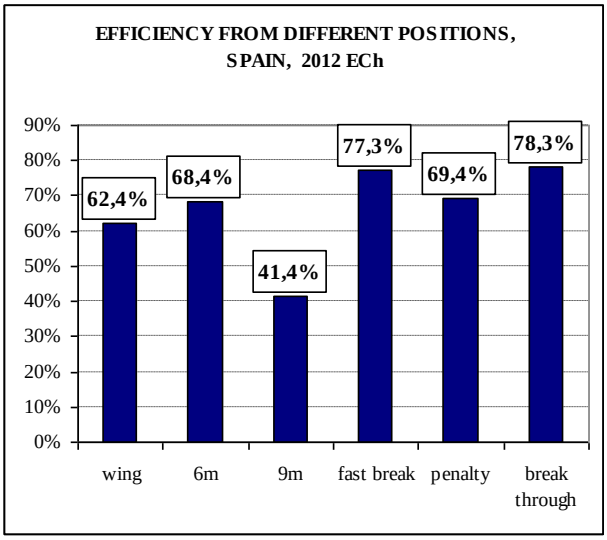
Spain was the host of the 2013 WChc and V. Riviera's team managed to win the gold medal for the second time after winning in 2005 by playing an extremely creative and spectacular handball.

12. Graph: Spain: the distribution of goals and efficiency 2011-2012









Conclusions

1. Analyzing the statistical data it turns out that at the 2003 WCh 77% of the scores resulted from attacks against set defence, at the 2004 ECh the number of scores was 5019 (wing, back, break-through, penalty and fast break) 81% of which (4068 scores) were concluded against set defence.

The tendency is the same in terms of goals. The ratio of goals scored against set defence to the total number of goals was 71% at the 2003 WCh, meanwhile at the 2004 ECh the same ratio stood at 71% (2041 out of 2733).

Table 1

2004 ECh Slovenia (Men's)								
ATTACKS AGAINST SET DEFENCE							COUNTER ATTACK	
Posittions	Pivot	Wing	Back	Break through	Total	Penalty	Fast break	Total
Scores	670	797	2169	432	4068	402	549	5019
Goal	476	429	802	334	2041	286	406	2733

		TOTAL NUMBER OF ATTACKS AGAINST SET DEFENCE
	Scores	**4068**
	Goals	**2041**

2012 Ech, Serbia (Men's)								
ATTACKS AGAINST SET DEFENCE							COUNTER ATTACK	
Posittions	Pivot	Wing	Back	Break through	Total	Penalty	Fast break	Total
Scores	701	781	1688	337	3507	349	529	4385
Goal	471	463	655	267	1856	258	394	2508

		TOTAL NUMBER OF ATTACKS AGAINST SET DEFENCE
	Scores	**3507**
	Goals	**1856**

The same ratios for scores at the 2011 WCh and the 2012 ECh are 79.67% and 79.97% respectively. In case of goals, the ratios are 73.19% and 74%, respectively.

(The results were generated by subtracting the number of scores/goals from fast break and penalty from the total scores/goals)

The analyses covered a relatively long period (2003-2012), but we can conclude that concerning the attack tactical elements and the number of scores and goals, the period did not bring huge changes. Although it is important to notice, that the period was characterized by the dominance of European teams, and the continuous development of technical and tactical elements both in defence and in attack.

Therefore, the hypothesis was proved: the vast majority of scores and goals (approximately 80% and 70% respectively) results from attacks against set defence.

2. The next hypothesis was that there are some group and team tactical elements that are deployed by all the teams. My research proved that these elements are position play (waving); some teams (ESP, SWE, FRA) start the waving not from the wing position but rather from the CB or B positions. Meanwhile the GER and SWE teams use this tactical elements with involving pivot player. All teams make use of the 4-2 transition tactic, that is: a player (except the pivot) leaves his position and runs into the defence line as a second pivot. In case of the SWE, RUS, FRA teams the CB is the player who most frequently moves into to the pivot position, and scoring opportunities are created by passes between the LB and the RB, and by changing position.

Each team uses some position-switch group tactical elements, mostly of 2-3 players, but compared to the earlier periods, these group elements are less frequently part of a team tactical element. There are basic movements utilized by all teams (short crossing, long crossing, back crossing). In case of numerical advantage/disadvantage, the teams mostly rely on the above-mentioned basic movements and their variation adapted to the special circumstances.

3. Each team has a specific tactical element with more players rotating; the French and German teams most frequently used this element. Besides this, each team has some special team specific tactical elements, which they use regularly during a match. In case of France this is the “double short crossing”, or in case of Germany the changing position of more

players or in case of Sweden, the passive wing, who positions himself in corner and backs out from the play.

The Russian team is the one that most heavily relies on position play due to their extremely aggressive, active and efficient 2-pivot tactical elements, but it is also the result of the fact that the Russian back players are less mobile, but have very strong shooting power.

4. The last hypothesis that

"the teams that has an adequate level of technical and tactical preparedness, in case of a failed tactical element are able to continue the game without interruption and widen the room for maneuver both in time and in space – also taking into account the reactions of the defense - in the sake of successfully concluding the attack and hit a score",

was also proved. As I have already mentioned all the teams utilize some basic movements („short crossing, „long crossing", changing position backward, back crossing, pivot preparation) that can be considered as preparation activities. In case of a failed attempt to create a scoring opportunity the teams continue the play without interruption, and create a new scoring opportunity from another position. Position play is a way to carry out this activity, but in modern handball of today changing position by improvisation is gaining importance as well in terms of position switch.

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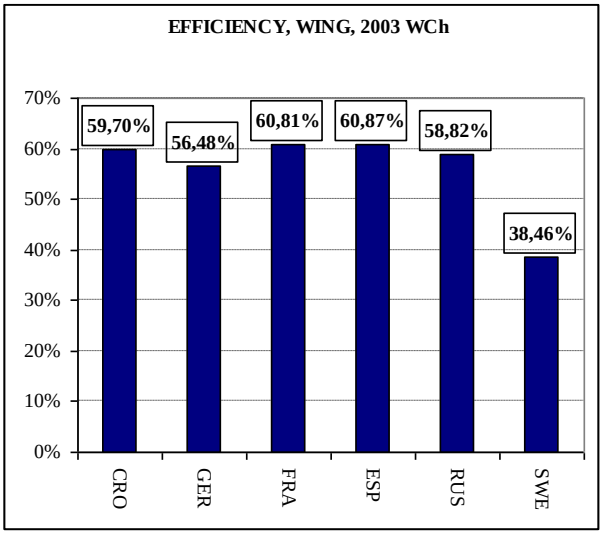
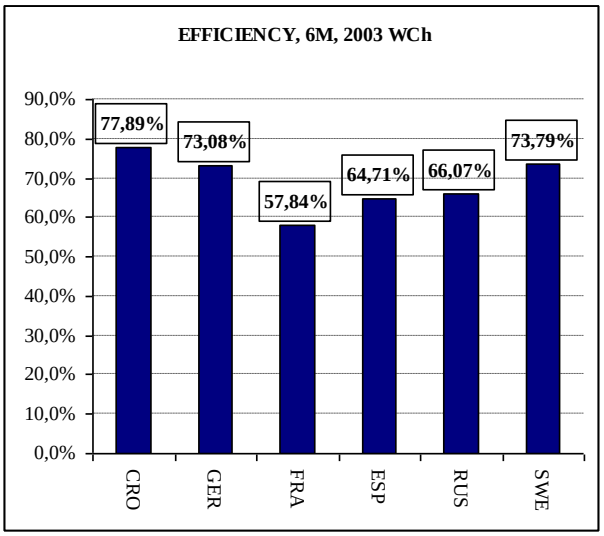
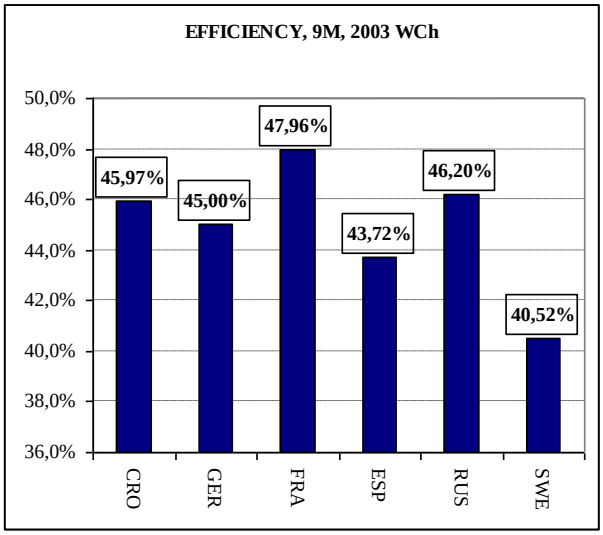
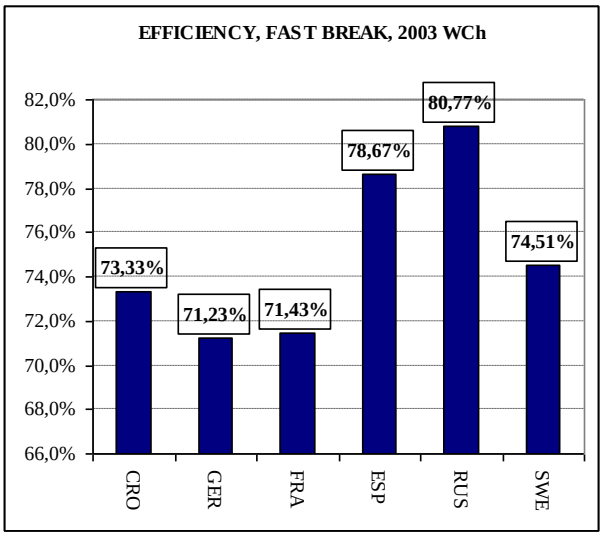
Appendix

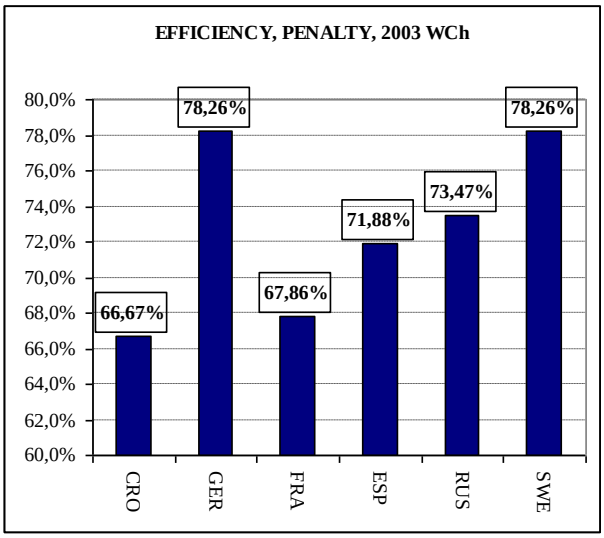
1. Graph: Efficiency from different positions 2003



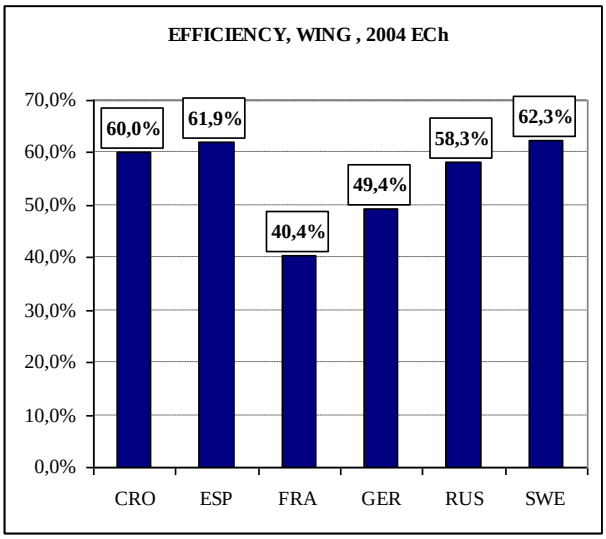


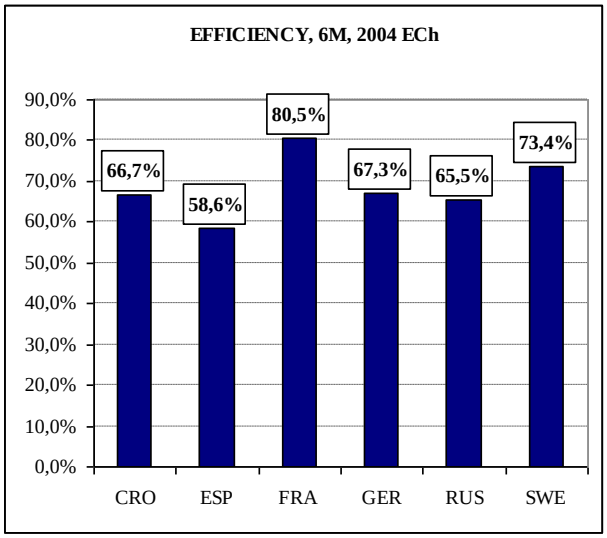


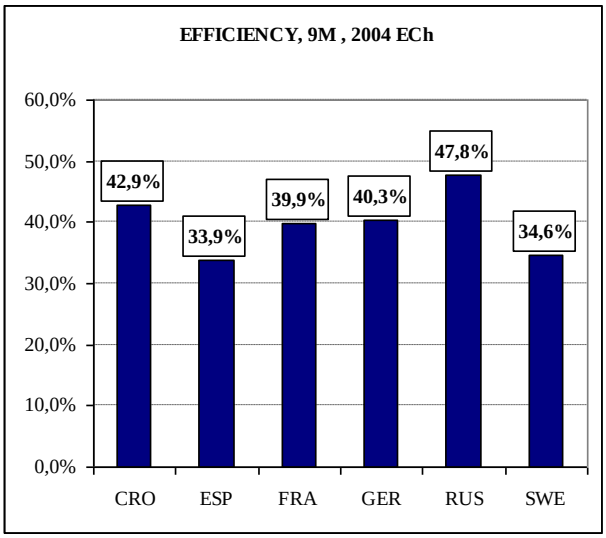


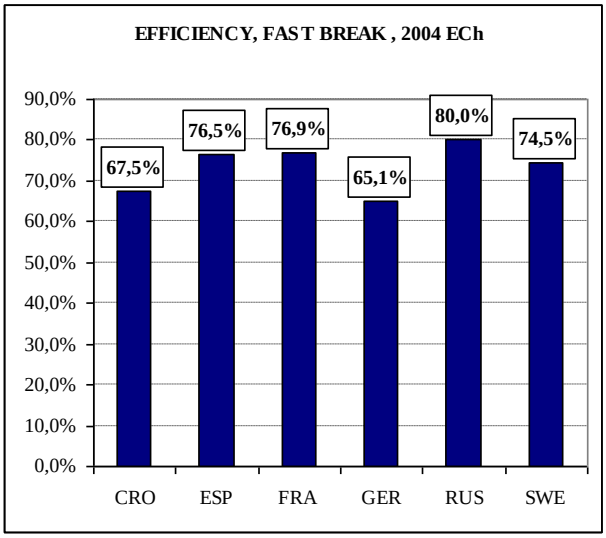


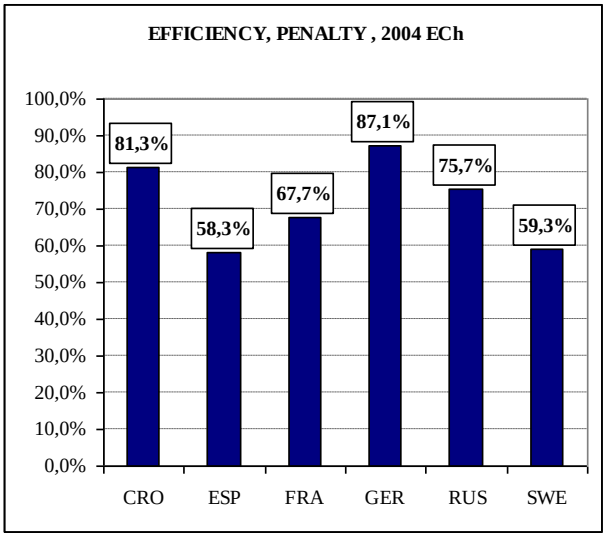
2. Graph: Efficiency from different positions 2004

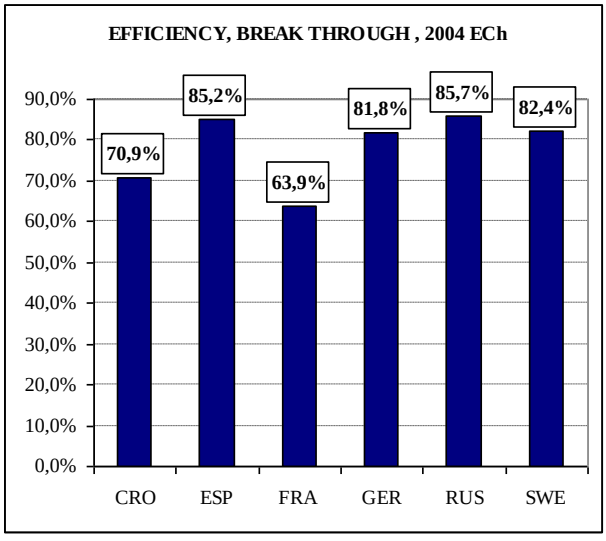




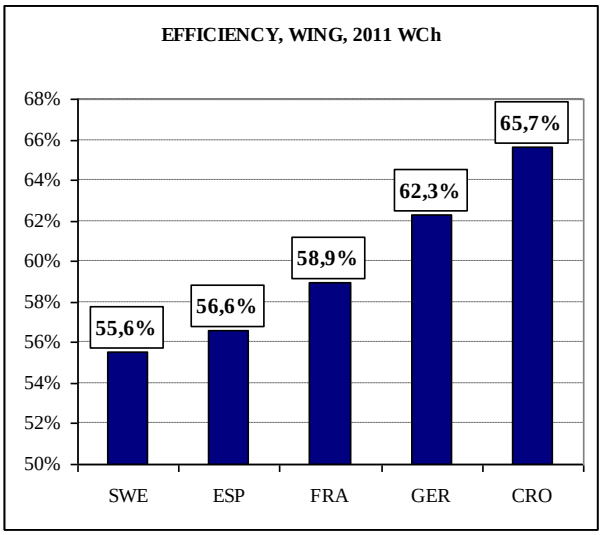


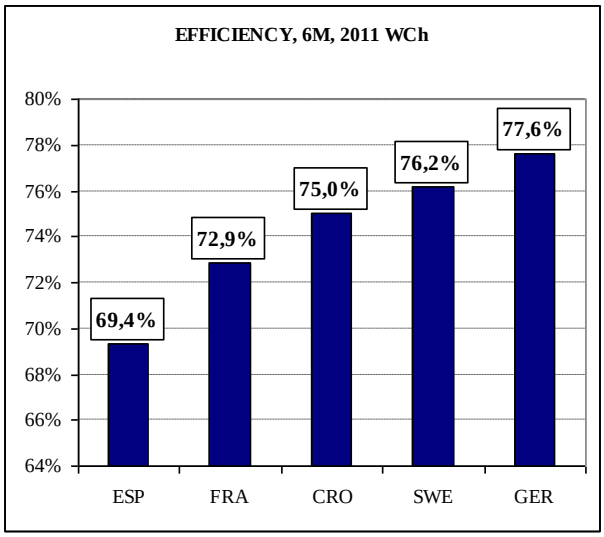


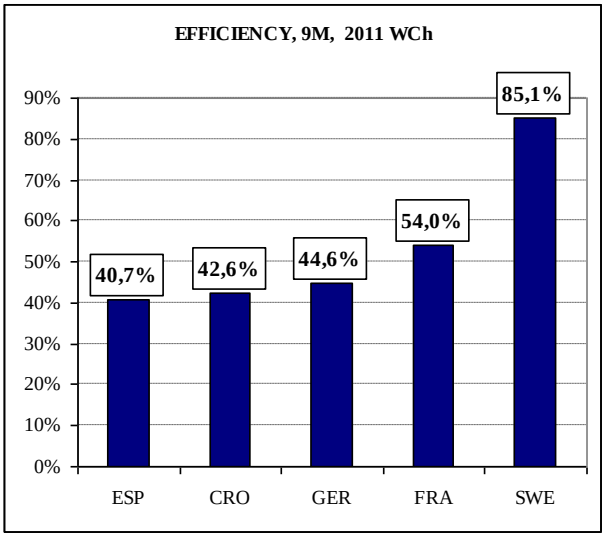


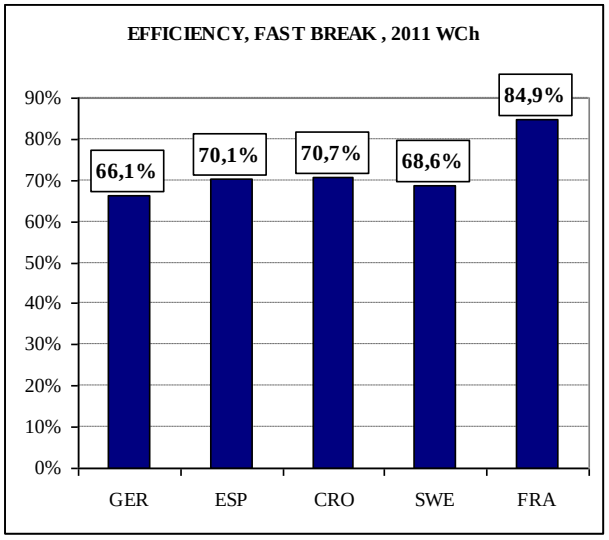


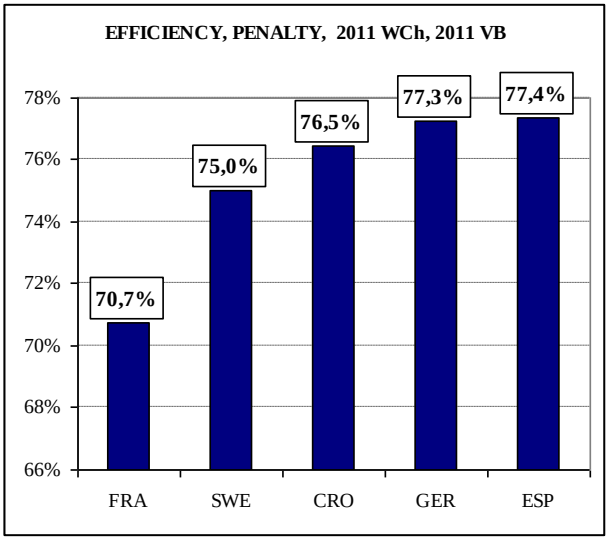
3. Graph: Efficiency from different positions 2011

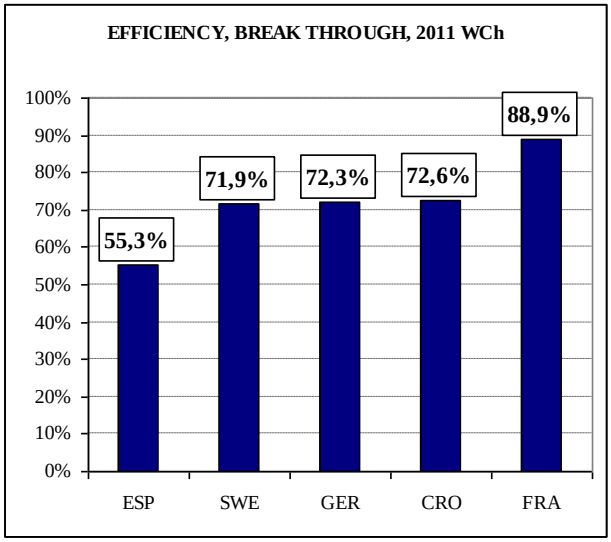




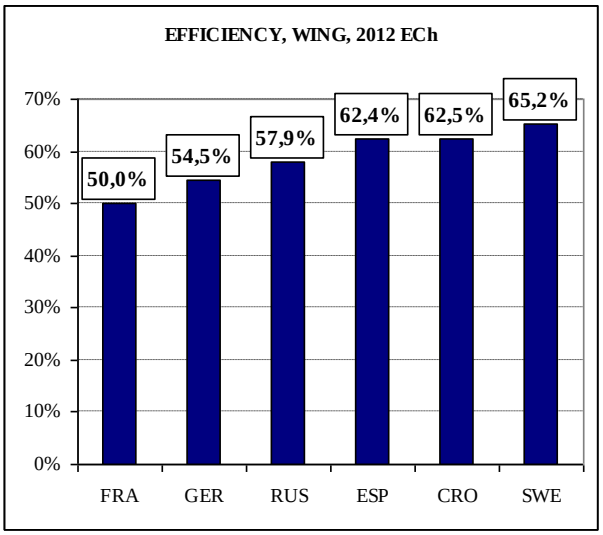


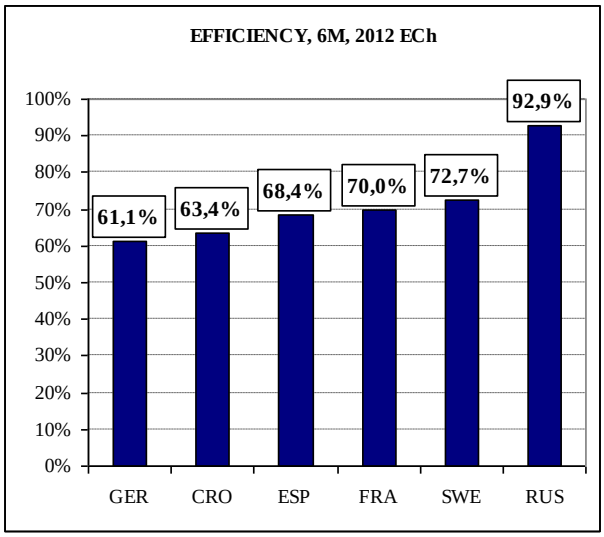


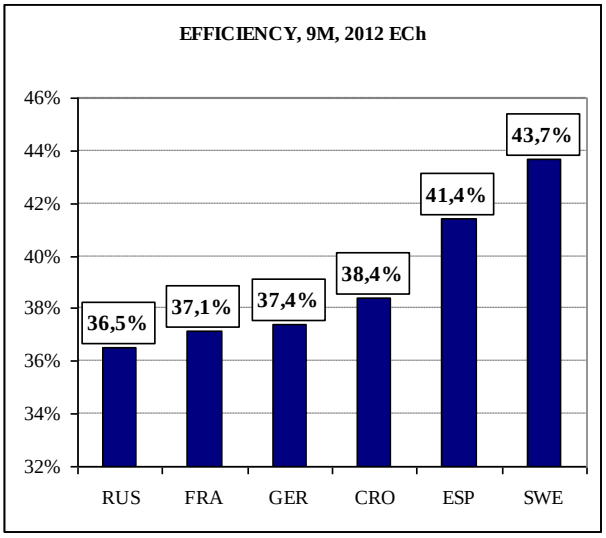


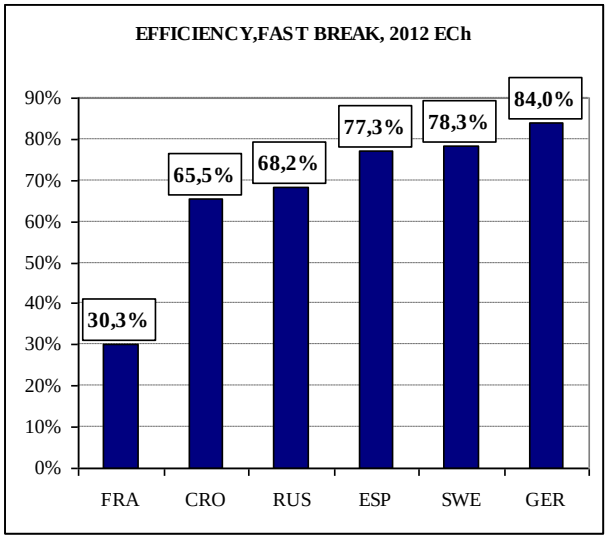


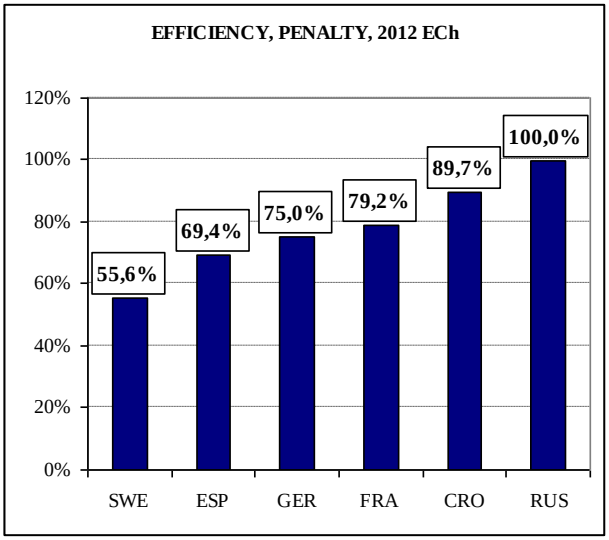
4. Graph: Efficiency from different positions 2012

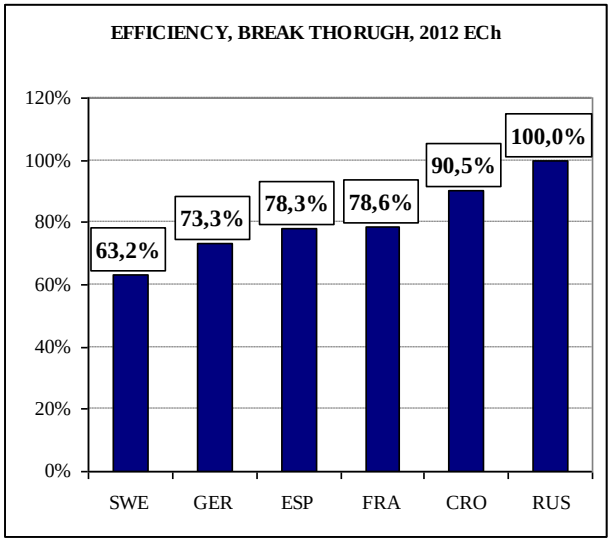










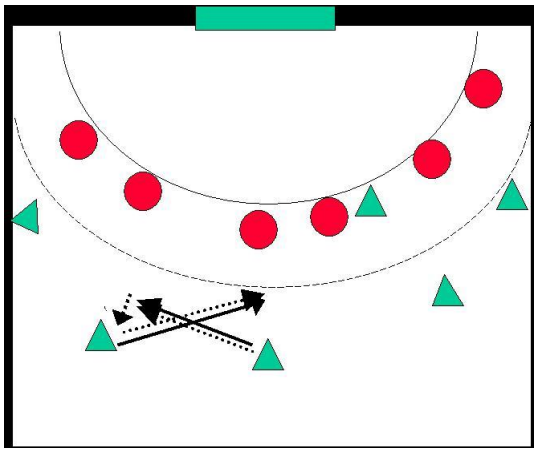


CROATIA

GROUP TACTICAL ELEMENTS

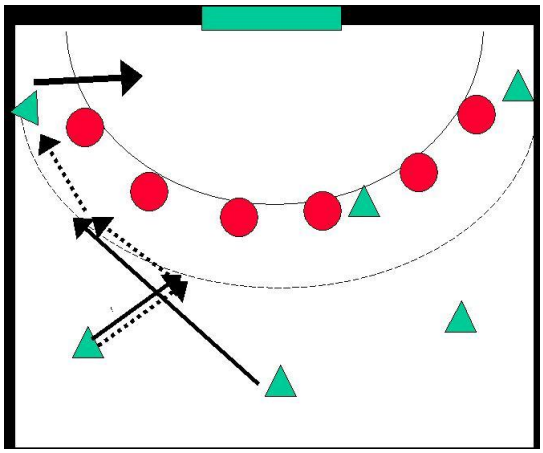
1. „Short crossing”

CB and LB cross with the ball



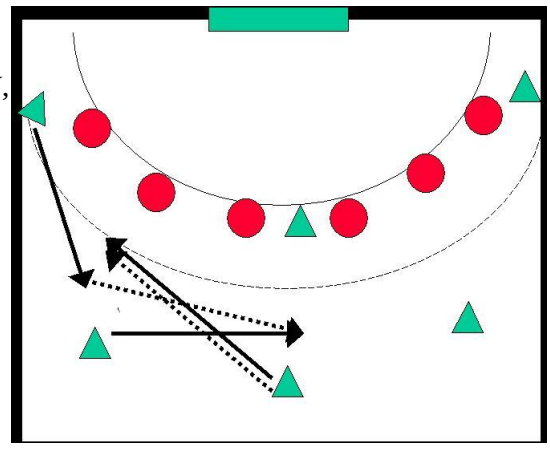
2. ”Back crossing””

CB crosses behind LB, gets the ball and passes it to LW



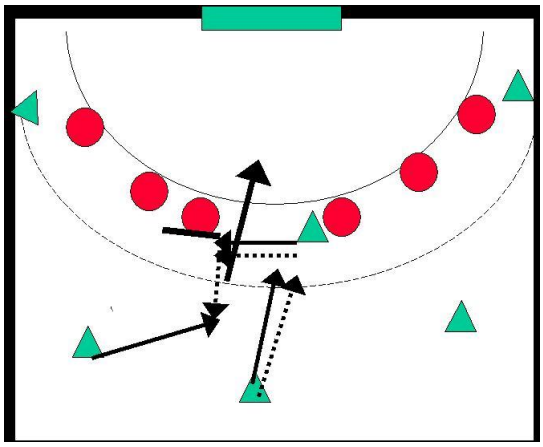
3. „Long preparation”

CB moves toward the W, passes the ball to W, W passes to the LB who moves to the centre



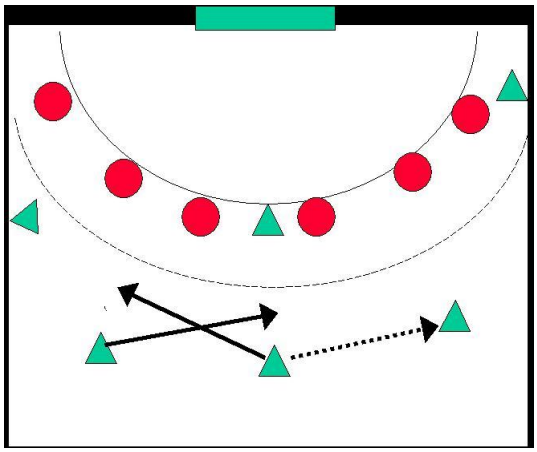
4. P creates a scoring opportunity

CB moves with the ball toward P, who steps out from the defence line. P moves back into the defence line, passes the ball to LB. LB takes a shot using the double screen provided by CB-P.



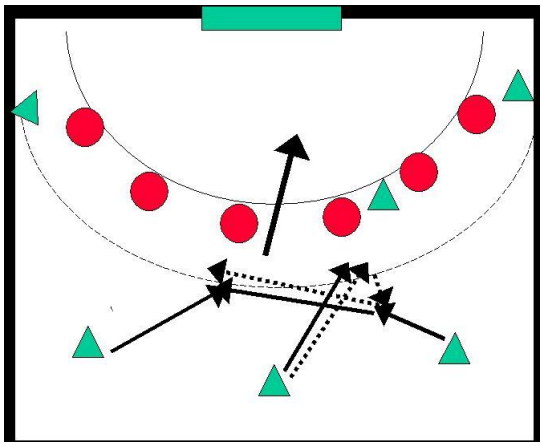
5. Changing position without ball

CB passes the ball to RB and changes position with LB



6. Double-crossing in the center

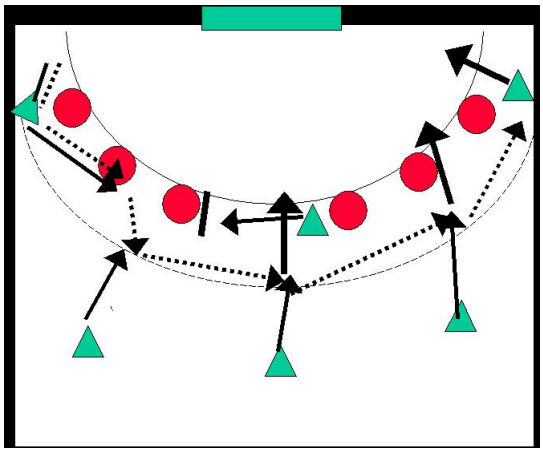
After crossing by CB and RB, RB receives the ball and passes it to LB. LB takes a shot using the screen provided by RB.



TEAM TACTICAL ELEMENTS

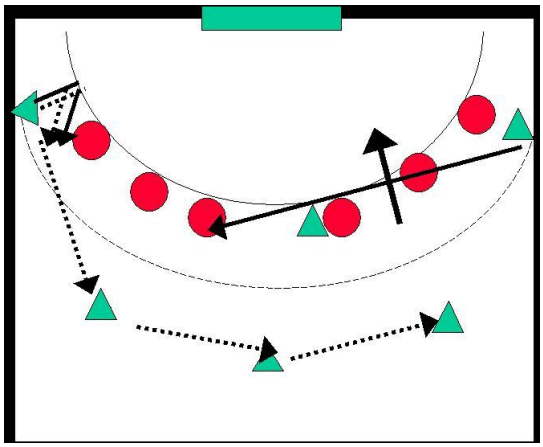
7. Position play

Waving



8. Wing running in

Either LW or RW moves to the pivot position

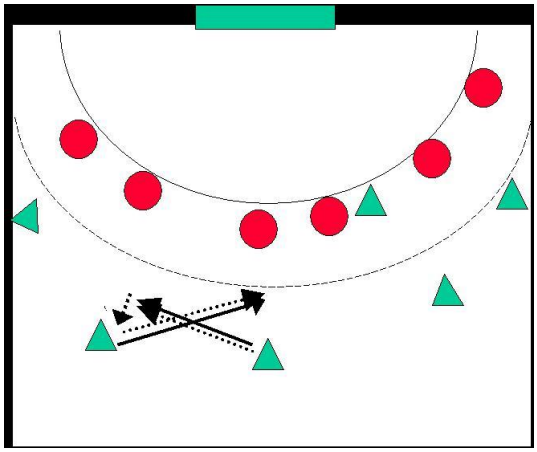


FRANCE

GROUP TACTICAL ELEMENTS

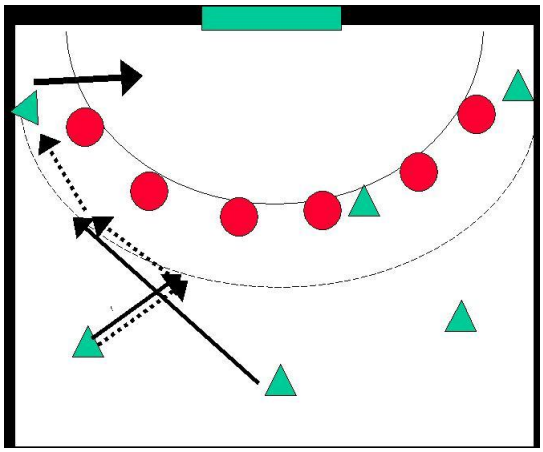
1. „Short crossing”

CB and LB crosses with possessing the ball.



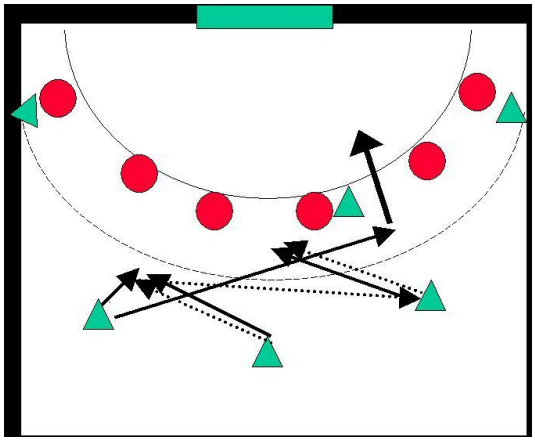
2. „Back crossing”

CB crosses behind LB, receives the ball and passes it to LW



3. „Double- crossing”

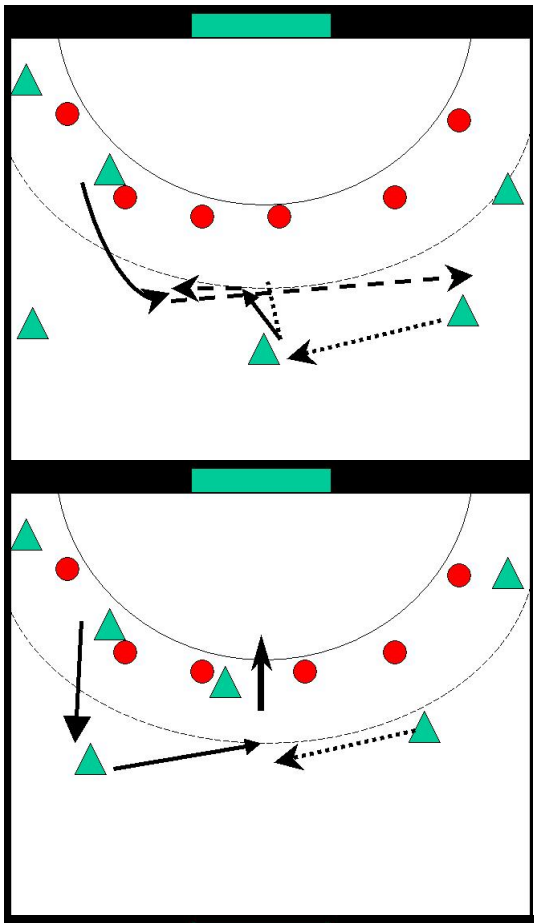
CB takes the ball forward LB, LB passes the ball to RB. LB and RB crosses with the ball, LB shots



TEAM TACTICAL ELEMENTS

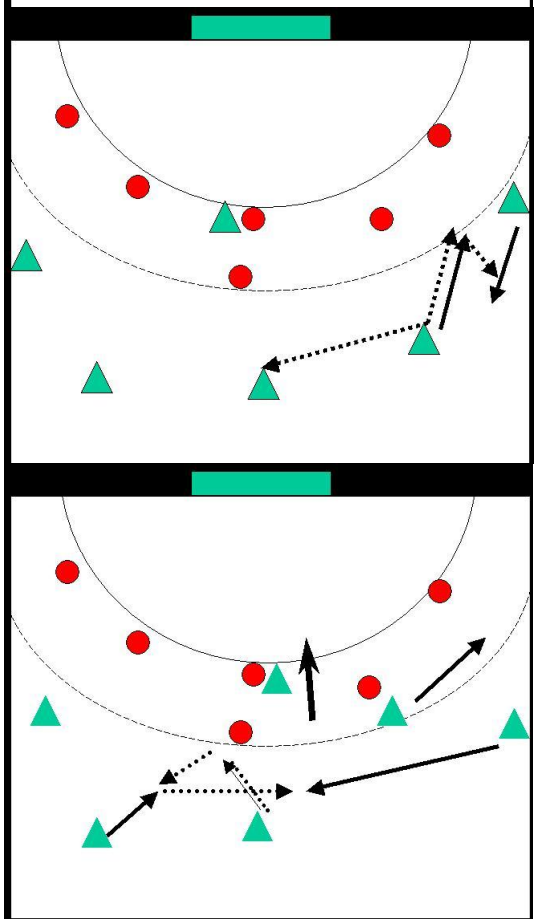
4. The continuation of the pivot-preparation play

After crossing by CB and P, P passes the ball to RB. RB passes the ball to LB; LB takes a shot using the screen provided by P.



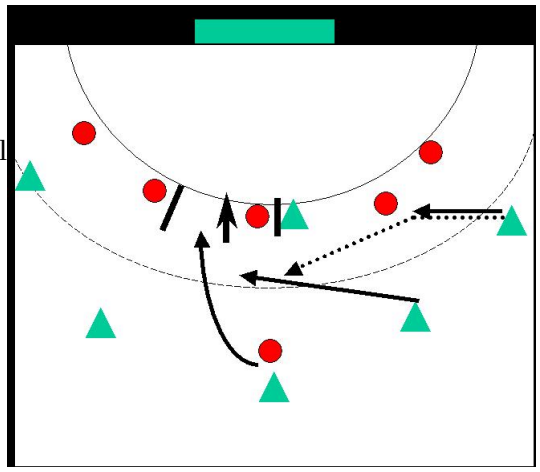
5. W moving into the centre

RB and RW crosses, RW passes the ball to CB and wait for CB and LB to cross. RW moves to the center, receives the ball from LB and takes a shot.



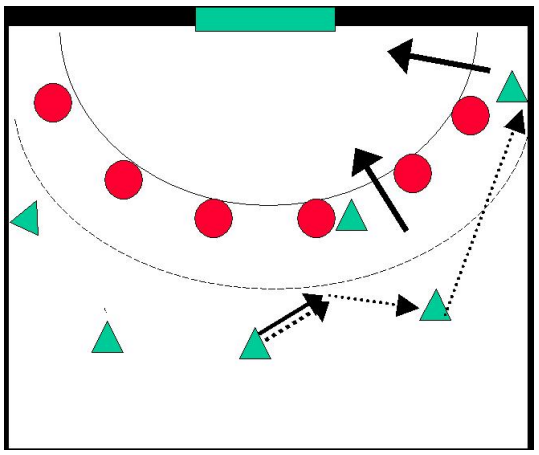
6. CB running in

RW makes a fake, CB runs into the defence line and provides a screen. RB receives the ball from RW and takes a shot using the double screen.



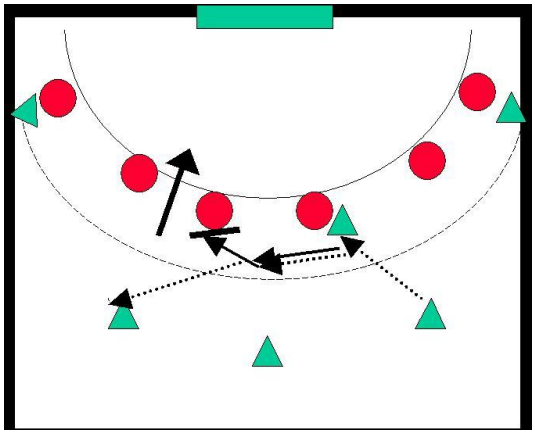
7. Position play

Waving started from CB position



8. P preparation

RB passes the ball to P, who moves out from the defense line. P passes to LB and makes a screen. LB takes a shot using the screen.

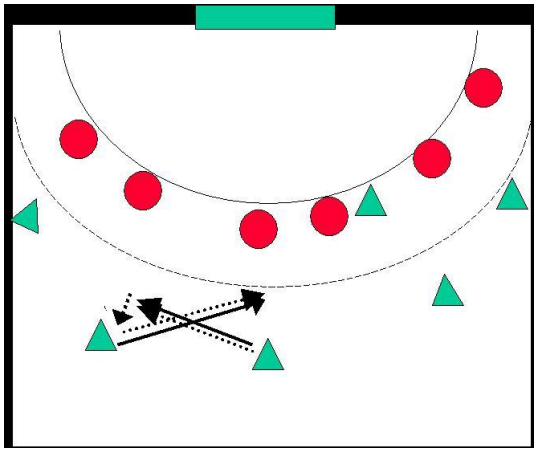


SVEDEN

GROUP TACTICAL ELEMENTS

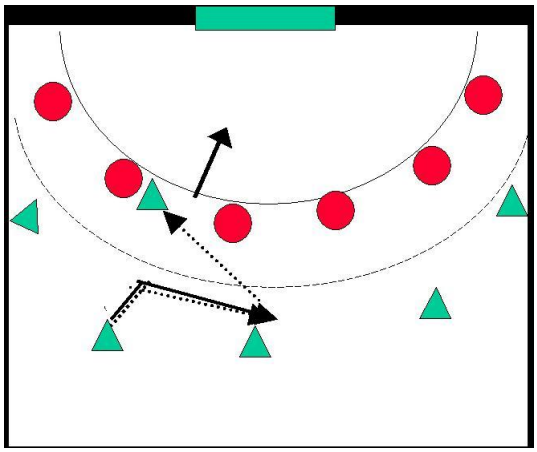
1. „Short crossing

CB and LB cross with the ball.

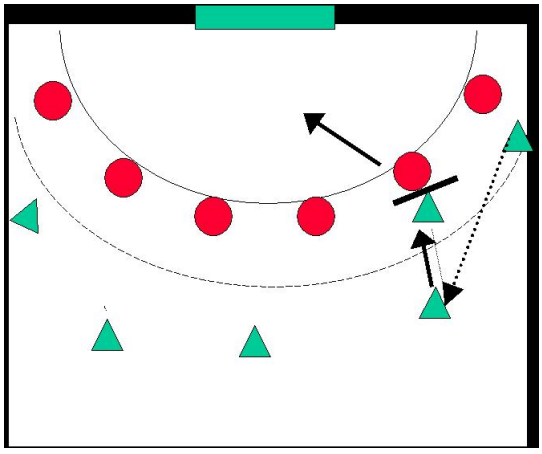


2. Passing to the pivot

The LB changes direction and passes to ball to the pivot



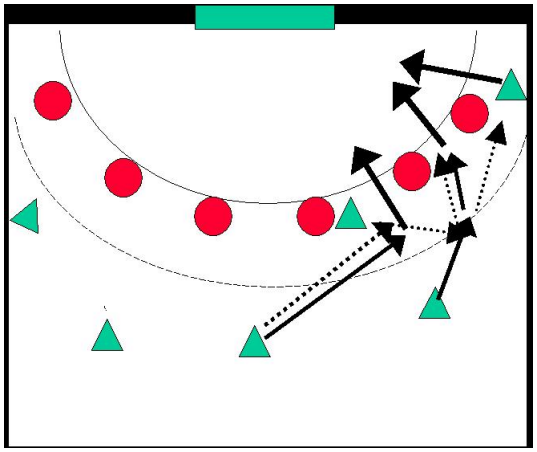
3. RB receives the ball from RW and takes a shot using the screen provided by P



TEAM TACTICAL ELEMENTS

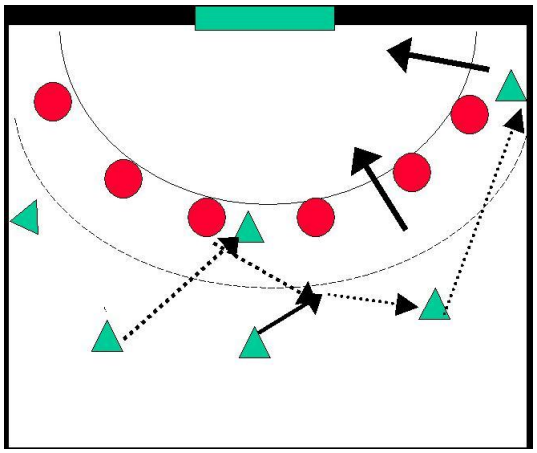
4. Position play

Waving starting from the CB position



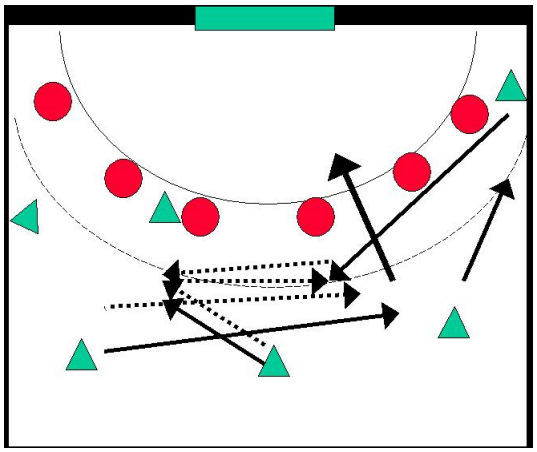
5. Position play

Waving using the pivot player



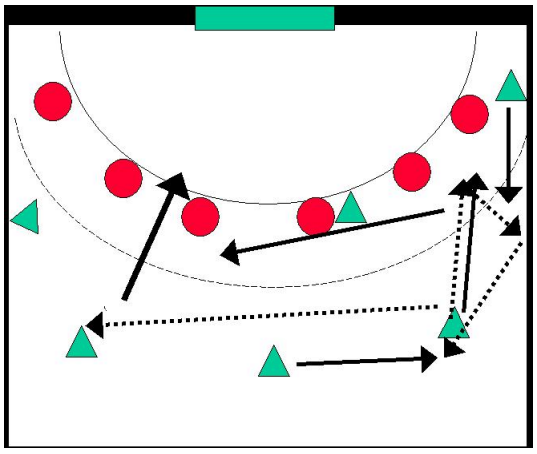
6. Wing running in

The wing sweeps inside, receives the ball from the CB and moves to the CB position (the LB moves to the RB position). The CB receives the ball from the wing and passes it to the RB. RB shoots

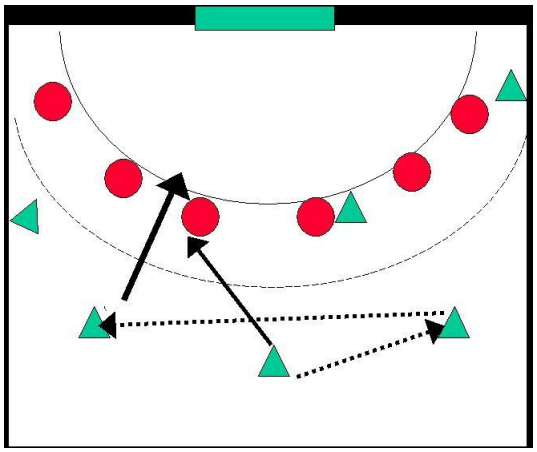


7. Back running in

RB changes his position with the RW and runs in. The CB moves to the RB position, receives the ball from the wing, passes itt o the LB. LB shots.



8. CB running in

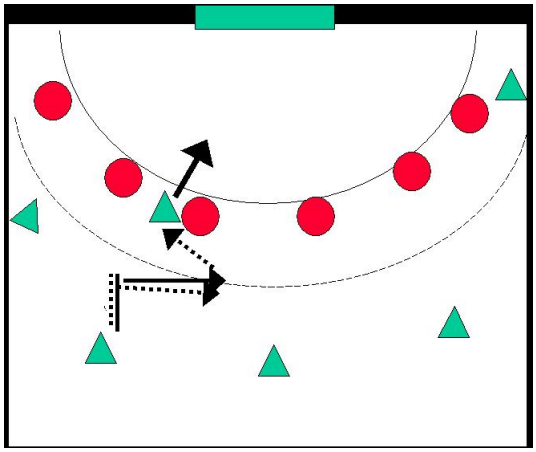


RUSSIA

GROUP TACTICAL ELEMENTS

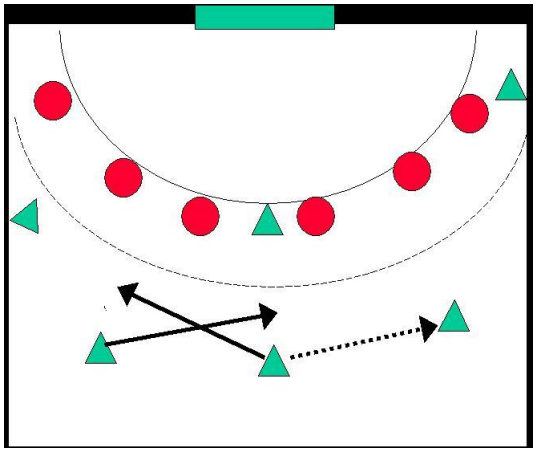
1. Creating a scoring opportunity for P

LB changes direction and passes the ball to P



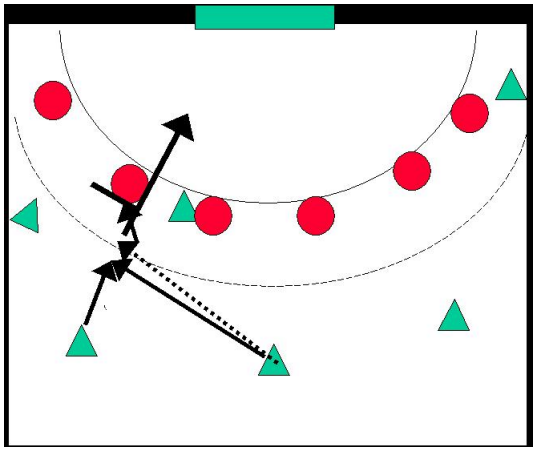
2. Crossing without the ball

CB passes the ball to RB and crosses with LB



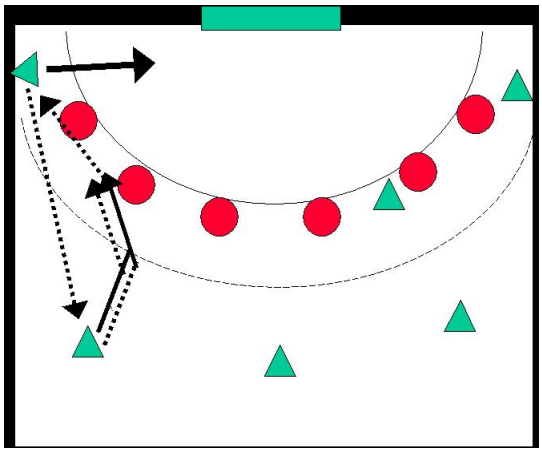
3. Shot using a screen

LB receives the ball from CB; CB moves into the defence line and provides a screen. LB takes a shot using the screen.



4. Contra waving

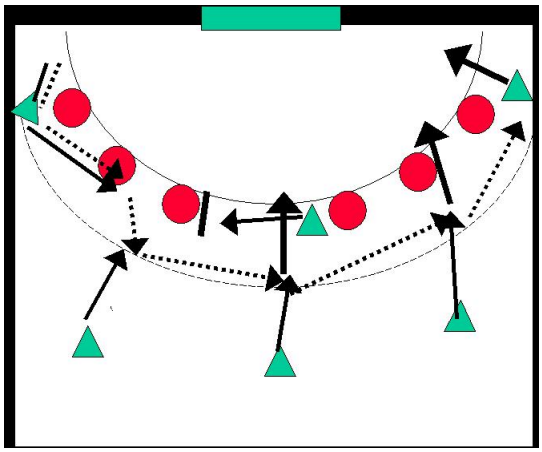
LB changes his direction, passes the ball to the W. W shoots



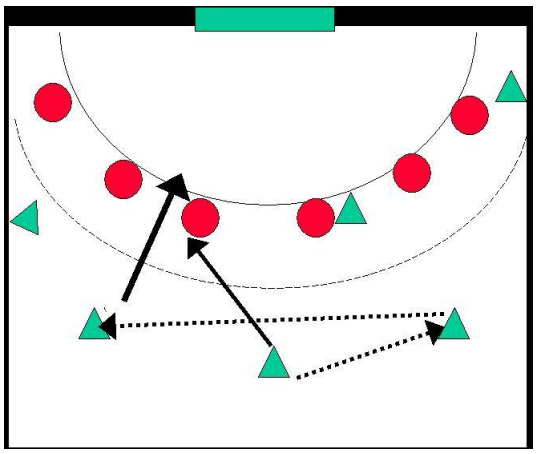
TEAM TACTICAL ELEMENTS

5. Position play

Waving

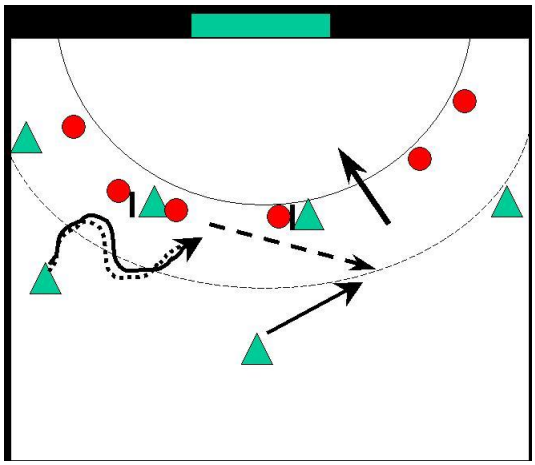


6. CB running in



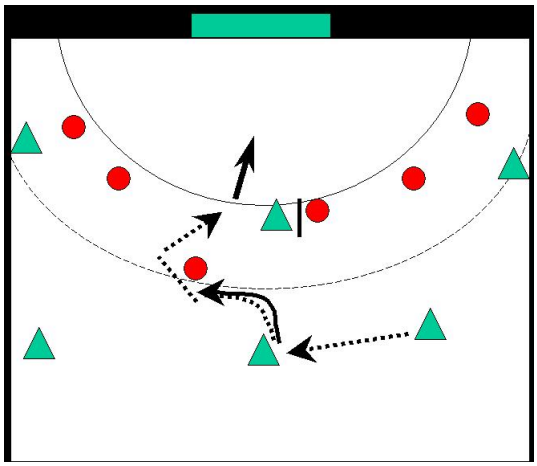
7. Creating a bias at the R side

LB makes a fake and breaks through between the two center defenders, passes the ball to CB who moves to the right hand side direction. CB shoots using the screen provided by P.



8. CB break through

Position play, the CB shoots by using the screen provided by the P

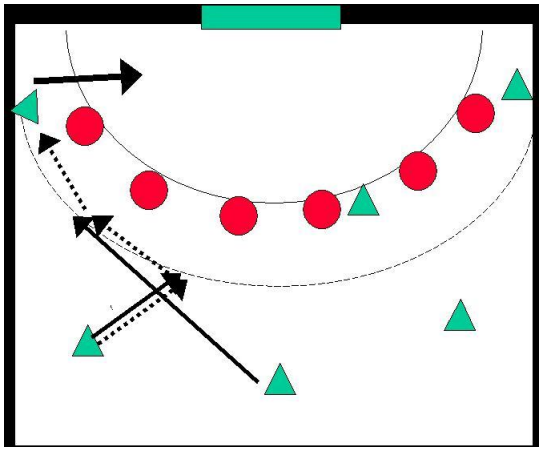


GERMANY

GROUP TACTICAL ELEMENTS

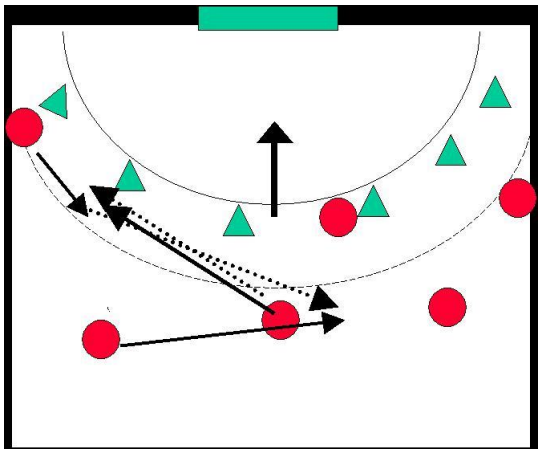
1. Back crossing

The CB makes a cross movement behind LB, receives the ball, passes it on to LW.



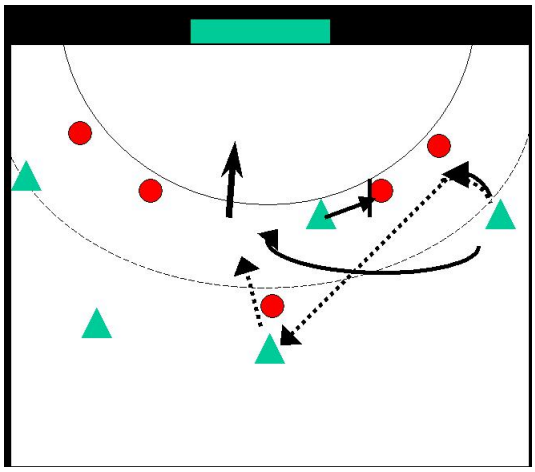
2. Long preparation

CB crosses with LW with the ball. LB moves the centre, receives the ball from LW and shoots.



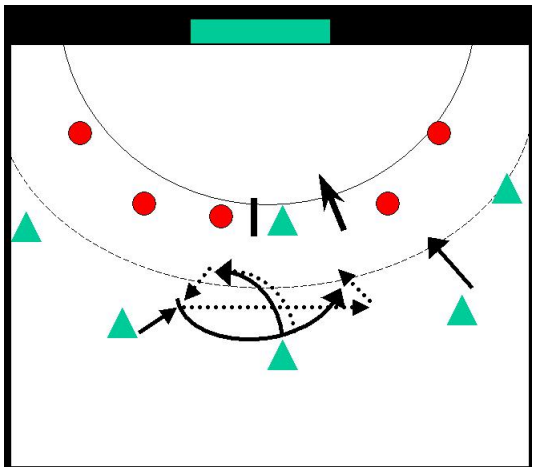
3. Parallel move (W running in)

RW makes a fake, passes the ball to the RB, receives the ball back from the RB and shoots using the screen provided by the P



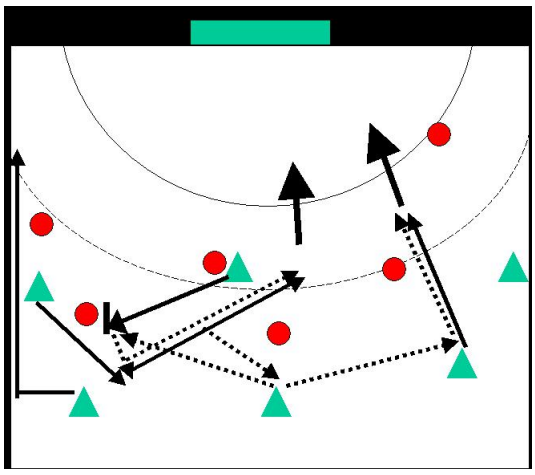
4. Continuation of the short crossing play

CB and LB cross; LB passes the ball to RB and moves to the centre. RB moves toward the sideline with the ball, passes the ball back to LB. LB takes a shot using the screen provided by the pivot.



5. P stepping out

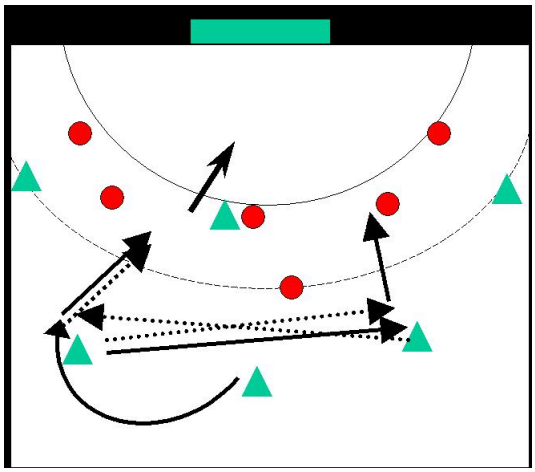
The CB passes the ball to P who steps out from the defence line. P blocks for LW. LW moves to the centre and gets the ball from the P.



GROUP TACTICAL ELEMENTS

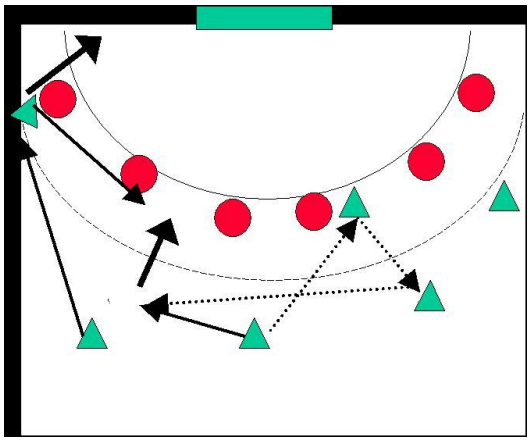
6. „Long crossing" in the center

LB does a long crossing with RB with the ball; then he moves into the defence line as second P. CB swings out to the earlier place of LB and receives the ball from RB.

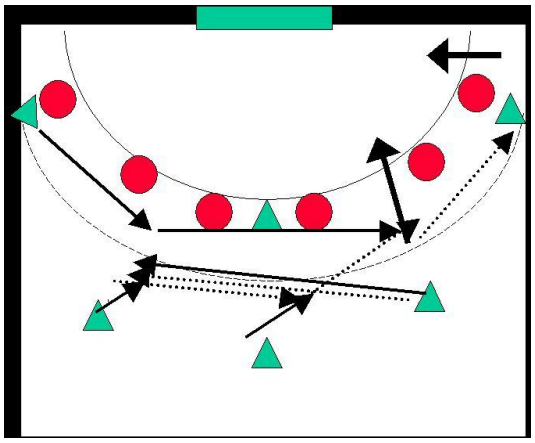


7. W running in

LW runs into the defence, CB passes the ball to the P, P passes the ball to RB. The CB moves to the LB position, receives the ball from the RB and feeds the LB in the wing position, LB scores from W position.



8. CB preparation with LW running in LB runs into the defence line. RB does long crossing with the ball with LB. LB passes the ball on to CB. LW runs into the centre and takes the RB position, and receives the ball from CB. Breakthrough or continuation to RW.

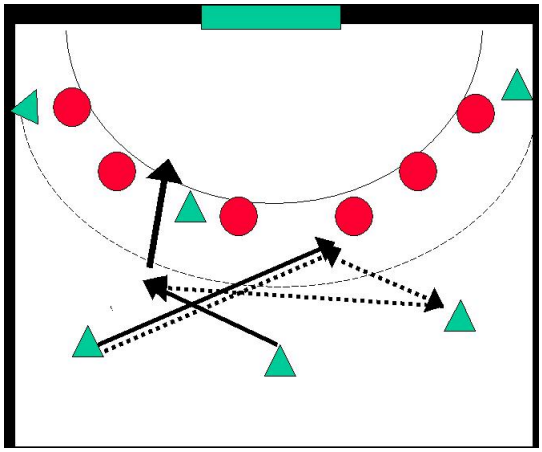


SPAIN

TEAM TACTICAL ELEMENTS

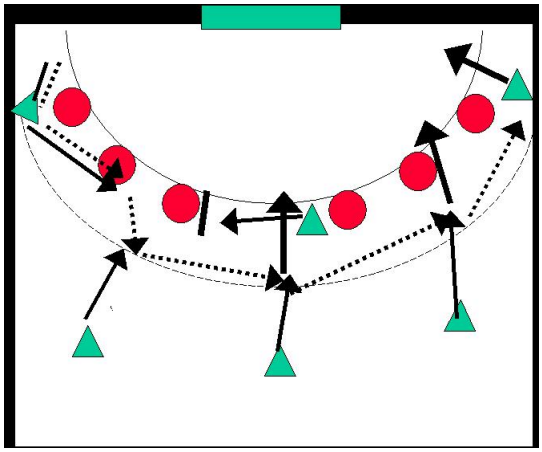
1. CB running in

LB takes the ball to RB and runs into the defence line as a second P. CB moves to the earlier place of the LB.



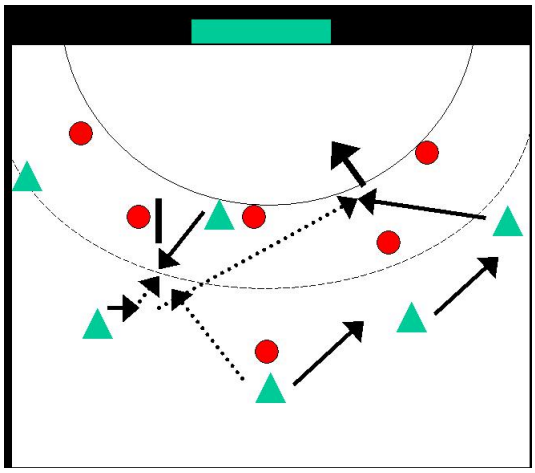
2. Position play

Waving



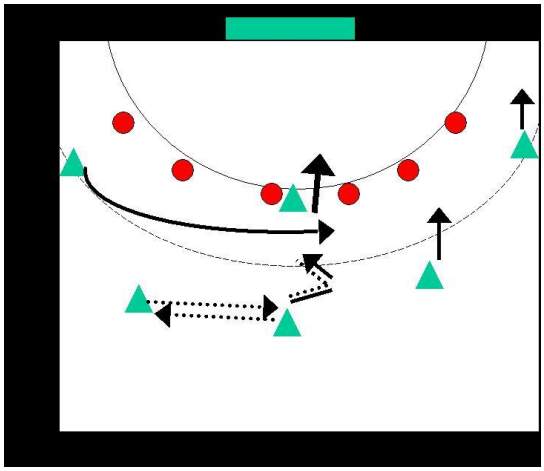
3. RW running in

CB passes the ball to P. LB moves to the centre and receives the ball from P. LB passes the ball on to the RW who runs into the defence line.



4. CB counter –break through

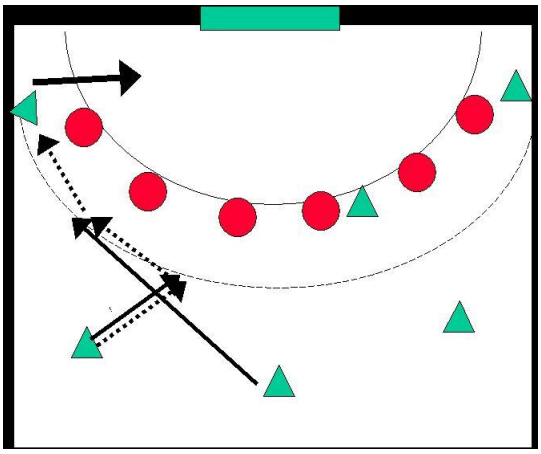
CB passes the ball to LB. LW simultaneously runs into the defence line as a second P. CB receives the ball back from LB and shoots using the double screen.



GROUP TACTICAL ELEMENTS

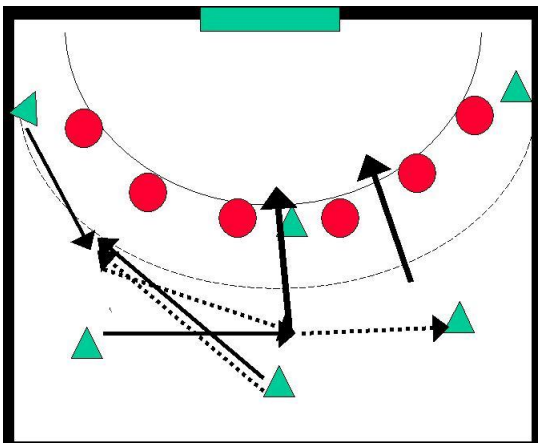
5. Back crossing

CB crosses behind LB, receives the ball from LB, fakes a breakthrough and passes the ball on to the LW.



6. Long preparation

CB crosses with LW. LB moves the centre, receives the ball from LW. LB takes a shot or passes the ball on to RB.



THE ROLE OF SET TURNOVER PLAY IN MODERN HANDBALL

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Hungarian Handball Federation, Hungary

1. Abstract

Introduction - There have been a number of alterations in the rules during the past years to make the game more spectacular, attracting by this more viewers and achieving better selling in the media while maintaining the game's popularity. The game has speeded up, the number of fast breaks has risen. The significance of offense against not organized defense is bigger, due to the improvement of defense effectiveness. That is why the role of set turnover play has risen as well. When examining this, it can be of assistance to find out to what extent this phase of the game is able to meet the challenges of the modern handball.

Methods – I applied a direct match monitoring method. I compiled a test sheet so that the process of set turnover play could be followed. The data gained were processed by statistical methods.

Results – In the course of the survey it was possible to point out the results and effectiveness of actions during set turnover play and their interaction.

Keywords

Statistical analysis, turnover play, activity, cooperation, success.

2. Introduction

Different kinds of special literature divide handball game into four basic phases. They are: offense against not organized defense, offense against set defense, turnover play and defense in set defense. Accordingly, our game consists of continuous changes of offenses and defenses in each others' fight.

„This competition between offense and defense ensures the impulse which is necessary for the development. The significance of both areas are enormous in the preparational work of the teams, completion of the right direction is inevitable." (Ökrös-Páll 2009)

Consequently, the same stress should be laid on the set turnover play as on all the other basic elements of the game.

This is why I have chosen the study of set turnover play as the topic of my thesis. In my opinion, this is the particular element of the game which is the least worked out. There the hidden reserves do lie that will increase the success of our team.

As fast break is the most spectacular element of the game, the successful turnover play possibly leading into recovering the ball must be the same.

Regarding success, correct decision making is of primary importance. In case of initiations it needs a faultless technical performance at great speed. The offense should be provoked to make a decision leading to mistake. Therefore, in order to neutralize the initiations and extended fast breaks effectively, awareness of turnover play is also inevitable.

The goal of my thesis is the analysis of set turnover play. How does it react to challenges caused by fast breaks, or can it react to them in an effective way? Are there any strategies for returning, or do the teams endeavour to get back to their 6m line as fast as they can and turn around there?

Analysis of the complex problems is well beyond the competence of my thesis as the depth and extent of the research required for it are outside my scope regarding the necessary means and opportunities.

Therefore I would like to present by the analysis of the men teams' matches of the 2011-2012 Champions League how the top teams of Europe reacted to the challenge, i.e. the objective effects of successful turnover play. What principles do the teams try to put into practice, or what should they try to do to make it effective? I would like to point out what are the problems, which the teams have to cope with and solve.

Special literature review

After losing the ball, the turnover play is an individual, group or team action to take the defense position as fast and as organized as possible, preventing this way the opponent team from completing effectively their attack against the disorganized defense. This can be interpreted as a special open-space defense in which the players should focus on cooperation to an even larger extent. The importance of this is emphasized by Marczinka as well. „The fast retreat is the first attempt for defense following the loss of the ball in order to prevent the opponent's fast counterattack .....At the moment of losing the ball the fast retreat should be immediately launched the phases of which are chronologically the following:

„1. Delaying offense in order to block the first defense attempt, first of all the individual departings
2 Fast return, first of all in order to block the group departures
3 Temporary retreat to prevent the group departures, this way it enables occasional team action." (Marczinka 1993).

To take these moves is extremely difficult because in the majority of cases the exact moment of losing the ball cannot be foreseen.

This is why the players must be well prepared so that they could react in time, thinking beforehand when seeing the turn of the game. It is therefore important and necessary to have tactics for the organized retreat. Fekete (2009) even makes a difference between passive and activeturnover play, separately. At passive turnover play, the only aim of the defensive team is to return in the shortest possible time to their own goal-area, defending this way directly the area dangerous for scoring. At the active turnover play on the other hand, tactical responsibilities are also emphasized like slowing down the opponent's offense in the court as well as provoking the opponent to make mistakes (Fekete 2008).

It is clear from the above that the fast return in time merely is a basic but not satisfactory precondition of the turnover play. It must have phases and waves, just like the extended fast break.

The behaviour of the waves was also tested in physics. According to Gamow-Cleveland's (1977) statements, waves have got periods which are determined by the time span of peaks and throughs of the wave. When two waves from opposite directions meet, interference may occur. However, interference does not regularly happen.

„It is a surprising characteristic that the different waves are usually able to pass across each other without changes or deformation" (Gamow-Cleveland 1977). Considering this, by simple returning we cannot trigger any kind of reaction from the offense, thus they can complete their action without obstacles. The result is beyond doubt. Then, how is it possible to be able to trigger off the effect so that the offense wave(s) will not prevail ."….. it can only happen if the two waves are of the same shape and size" (Gamow-Cleveland 1977). Physics offers the answer, during the turnover play the movement of the defense team should take place at the same time, the same speed and possibly in the same number as the offense team's, synchronously with their moves. It requires accurate organization and working out just like extended fast break.

Ökrös and Páll acknowledge the same theory when they determine the responsibility of the defense players. Returning should be purposeful and it should hinder the opponent's movement with man-to-man defense. In the meantime the defense player simultaneously controls the situation and number of the offense players, as the most important task is forming identity. At the same time, they have to watch in which zone the opponent brings up the ball, this way sharing the attention, enabling to realize the game situations (Ökrös – Páll 2008).
Its performance requires a very careful and cautious work.
„The responsibilities of the players should also be included in a system:

- early return
- coverage of directions of passings
- man-to-man coverage against ball carrier
- fast return
- retreat for defense '' (Vas 1999).

The importance of a well organized turnover play is unambiguously expressed in the special literature. In spite of this, just general statements are made. In the set defense play (whatever system it may be) is worked out what in the individual defensive positions the responsibilities of the particular players are, what zones the player should observe, on what principles he should use the combinations with the other members of the team, creating a firm unit by this. We cannot find anything like this in connection with turnover play, although in this element of the game it would be even more important to make the responsibilities clear.

„62. 65 % of the offenses against unorganized defense takes place within 4 to 6 seconds, the bigger break is at 7 or 8 seconds. After this the teams are unable to take start advantage or man-advantage. Offenses in less than 4 to 6 seconds means 2 or 3, possibly 4 passes '' (Wágner 2007).
In organized retreat this time is available for the teams. Within this time the movement of the opponents must be realized, analyzed, take actions and cooperate with the team members.

The question is how does practice confirm the principle. Is the significance and influence of the question underestimated or exaggerated regarding the final score? Does it cause any problem to the teams?

Analysis of Marczinka about the 3rd Women Junior Handball World Championship stated: 20 or 21 % of the goals were scored from fast breaks, execution was 72,8 %. (It was the best.) Fast breaks were attempted from any kind of situations by the teams. Offensive game was simplified, little trained basic movement, piston movement or crossing was typical. Last but not least, the teams tried to perform the turnover play in an organized system (Marczinka 2010). It was obviously promoted by the simplified offensive game, but the effectiveness of this is greatly questioned by the number of the makes conceived.

Pollány in his analysis about the Men's European Championship 2012 made similar statements, according to which the importance of fast breaks has grown, the number of goals scored from them has risen (they happened in the first and second phases). Simplification of offensive game could also be seen here, including fast break and extended fast break (Pollány 2012). So, on the basis of the tendencies in practice it can be stated that working out tactics of turnover play is necessary, as well as working out tactics of the individual players, parts of the team and entire team in accordance with the abilities of the team.

It is also important from the point of view of the handball game's development that the turnover play (as one of the tactical elements of the game) could meet the challenges of the accelerated game.

Hypothesis

I suppose that

1. Finishing offense off line before the turnover play influences the effective chance of turnover play in a negative way.
2. Time of initiating offense (time between the loss of ball and initiating offense) and time of actual initiation separately but together as well, determine the success of return.
3. Lack of active defensive action against extended fast break decreases the effectiveness of the turnover play.
4. Putting the players running in the first wave (wing and line players) out of the action during extended fast break increases the effectiveness of the turnover play.
5. Offensive-defense substitution influences the turnover play in a negative way.

3. Methods of analysis

I have chosen the matches of Champions League 2011-2012 for my analysis (Enclosure 1). I consider that these top clubteams determine and demonstrate the tendencies of the present and future. I have compiled the matches of the countries with different hadball culture on the basis of the tactical systems used by the teams. I have chosen and separated teams using substitutes in offensive-defense (further on „Group 1") and teams not using these substitutions (further on „Group 2") because this way we can give a picture of how much this fact determines the way of turnover play.

I classified the teams in Group 1 which substituted at least two players during the great part of the match necessarily. In Group 2 there were teams which substituted one player but depending on the situation they did not complete it by all means.

As a method I used the indirect match observing process, considering its advantages and disadvantages.

Up-to-date observation techniques are very important and necessary to make progress, as they make it possible to improve performance and successfulness. (Herczeg 2008)
I used statistical methods to process the data gained.
To reach my goals while analysing I worked out a test sheet (Table 1).
I put the measuring in a particular order so that the return can be followed in progress, that is, the actions during the withdrawal should be in sequence, in the real chronological order
I divided the process of returns into main parts which are in close relationship with each other, inseparable one by one, but their consequences separately, by themselves, influence the success of the returns in both positive and negative ways. On the test sheet I have not separated them.

I put the actions provoking and causing return in the first unit. I examined what offensive systems the teams adopted against what defense systems. I separated the main basic forms like one-line or open defense and position keeping, position switch and mixed systems offense. In this circle I examined who of the players executed the offense and from which spot, differentiating short and long distance shot zones and what the resulted was.

In the second unit I observed the section of the return which results from the way of the fast break and its process. On the one hand, due to the first unit how many players were early returning and late returning, on the other hand, I observed the time of initiating offense which means the period of time between shooting the ball, losing the ball and initiating offense. The way of initiating (direct, indirect), consequently the number of passes and the area of running (right side, left side or in the middle).

In the third unit I put the outcome as a result of the return. How many players were returning to the defense zone? Was their cooperation deliberate or spontaneous? As long as the returning players take their defense position in accordance with the number of offense players and their moving, this way they are able to initiate coordinated defense action and perform it (slowing or blocking the offense), this action can be called deliberate. When the players during organized retreat independently of each other's movement and position (ad hoc) try to interfere individually to hinder offense, this action can be called spontaneous. Where did the first interference (if there were any) take place, where did they try to block fast break and what was the result? Who completed the offense, how long did it take, and from where was it executed, with special attention to the players arriving in the first wave?

Independently of the test sheet, I have taken notes about the returns so that I could follow them more accurately (e.g. result of substitution). This way I have tried to decrease the disadvantages of the indirect observation method.

4. Development

Developing returns

Distribution of number of returns

On 15 matches 484 returns took place which is 16 per team on the average. Out of them 291 ended with a shot by the offensive team. Thus, regarding returns, 60 % of them were unsuccessful, and out of them 206, 42 % resulted in goals. This way, in 193 cases 40 % of the returns were successful. Initiation failed, technical mistake, fault from the defense side, or finished with ball possession. It is shaded by the fact that initiation failed 62 times, 13 % is not only the result of good organized retreat but it may also be the result of tactical consideration of the offense team. It cannot be separated or demonstrated clearly.

I found differences between the half-times too. There were 5 % more returns in the first half. Regarding success of the return, however, there is remarkable difference. In the second half 9 % decline came about. It can be seen more precisely when we divide the halves into 10 minutes' units. (Table 2) It is remarakable that numbers of initiations and returns as well declined in both halves in the last 10 minutes (end play). It demonstrates that the teams in this period even more increasingly focus on safe and successful finish.

Relationship between the defense systems in terms of frequency of the turnover play

The teams adopted a 6:0 or a kind of open (5:1, 3:2:1, 4:2 etc.) defense system, with the characteristic features of a particular nation, or taking into account the tactical considerations against the opponents. As a consequence of the simplified offensive game, keeping position, changing position and mixed game could be separated (Table 3). There was 2 or 3 % difference in their usage, due to the defense tactics and the different handball culture and game style of the opponent.

The teams typically defended 6:0 in their matches.

Majority of returns happened after offense against 6:0 defense system, 211 times, which is more than 43 % of all the returns.

In one third of the cases initiation was started from open defense. 60 times, in 12 % of the returns, after an individual initiation the teams had to return. Obviously, number of chances from numerical superiority or inferiority – about 10 % - are restricted by the numbers of suspensions in the matches.

Relationship between result of executing offense and numbers of returns

It is clear that regarding the execution either off line (6) or at long distance shooting zone (outside 9) at significant extent, in 220 cases (45 %) it was due to technical mistake why the teams were forced to return. Regarding shots, after saving in 24 % or following a rebound in 21 % return was performed, there is no essential difference. On the other hand, it is meaningful that after the the goal, merely 8 % is the number of initiations from throw-off. Probably the teams have learnt to perform fast turnover play after scoring.

Following the executed offenses off the goal area line (without technical mistakes less, 112, 23 %) there were fewer returns, while after shots from distance there were more returns (152, 31 %) – by finishing off-line it is more likely that the executing player does not get back. It is proved by the number of initiations after goal (26 and 17), but the number of turnover play contradicts this. (Table 4)
Between the offenses, in case of position keeping and mixed action, shots off-line or from long distance, there was not significant difference regarding the numbers of returns. It is remarkable that following the position changes the difference is 30 %, in favour of returns after shots from long distance, opposed to returns after shots off-line. However, the number of returns, after executing offenses off-line is 30 % higher than that of the offenses executed from distance, but it can be considered as natural.

Table 5 demonstrates the differences between teams adopting substitutions (1) or not adopting substitutions (2) during offense and defense. It is clear that in the ways of offenses, numbers of organized retreat show a different picture in view of execution and results in both teams. Nevertheless, on the whole, after executing either off-line or from distance, teams with substitutions had to complete turnover play in greater number, which means 5 % more than those who did not substitute. Surprisingly, returns after piston movements were exceptions.

A crucial difference can be seen in the numbers of turnover play after scoring. Here, in 58 % of the cases, the teams with substitutions were compelled to do so. Obviously, opponents want to benefit from the defense confusion due to substitution (temporary numerical superiority of the team that got the make).

Factors influencing the start of the turnover play

Fast breaks

To examine turnover play, chances and ways of fast breaks following offense executions must be dealt with. On the analysed matches from among the fast breaks 36 % was direct initiation, 54 % attack and 9 or 10 % fast throw-off. Fast breaks were completed by 2 or 3 passes by the teams. Table 6 shows the ways of fast breaks, their places in view of offense-execution (off-line or from a long distance shooting zone). After executing off line, teams started 4 % less initiations than after executing from long distance.

In Group 1 teams initiated 221 fast breaks, in Group 2 the figure was 263 only. There are differences between choosing the ways of fast breaks. In Group 1, 43 % was direct initiation, 49 % was attack and 7 % was fast throw off proportionally. In Group 2 this ratio was 31 %, 59 % and 10 %. The teams using substitutions, benefitting from the departing moving forward wingmen choose the alternative of direct initiation in greater number, as the special defense players cannot and do not intend to overtake the execution of the offense from extended fast break from inner positions. At the same time, the teams that do not adopt substitutions, the chance of attack can be benefitted from in a better way, as there are no organizational problems because of substitutions during fast break. This advantage can be taken at fast throw-off as well, as the team have on all positions the suitable players on court for the given situation „every moment". That is why this team can initiate fast breaks more frequently.

Regarding the location of the fast breaks, with both teams the middle of the court is dominating. It reflects the current tendency.

Time of starting offense

It is vital in connection with turnover play how fast the offensive team can start offense after possessing the ball. For this the teams basically needed 1 to 3 seconds. At 4 seconds and over the number of initiations dropped significantly. With both groups, it gives a mixed picture of how fast and how many times the opponents started fast break after finishing offense. (Table7)

In Group1, in 10 % of its fast breaks more than 3 seconds passed before starting offense initiation.

Group 2 started 20 % of its fast breaks even after that time span. If no offense can be started in 3 seconds after possessing the ball, the teams using substitutions rather give up the chance of fast break. They would rather complete the substitution, choosing the offense against set defense, benefitting from their special offense players.

Early returns

During turnover play the chances of defense action also depend on the number of early returning players. Table 8 shows the number of returning players or the number of early returning players considering the opponent's way of fast break. The number of early returning players was 0 to 2, 198 times (41 %) which questions the chance of arranging turnover play. Nevertheless, 122 times (25 %) it was 3 players, 164 times (34 %) at least 4 players started returning in time, which shows an effort of the teams to increase effectiveness, but it is also clear that there is a lot to do in this field as well.

After shooting from long distance and without preparation, or losing the ball, prominently high, 48.5 % was the number of inadequately returning players, i.e. 0 to 2.
Awareness of anticipation skill was much better after turnover play following off-line execution, because the 0 to 2 returning players here counted „only" 32.5 %. Although the spot

of the execution is more disadvantageous for starting a return, but the result of the action is clearly seen, so anticipation and taking action on time is easier.

In case of shots from a long distance, execution can be more unexpected, therefore the „preparation" for return is much harder, not to speak about the line players´ (especially wing players) unfavourable position for turnover play (in a lot of cases they are set in the corner in the very moment of ball loss).

Comparing the two groups regarding turnover play after shots from a long distance there was no difference between them. However, after offenses finished off line in Group 2 there were more than 3 returning players in 71 %, while in Group 1 it was only 64 %. It seems that the special offense players are less prepared for organized retreat, as these players are basically skilled and prepared for offense.

Results of the turnover play

Level of being organized

Table 9 shows the result of turnover play after executing offense, as long as occurrence of turnover play was foreseen. On the basis of the planned tactical theories, offense ended in shooting at the goal, the turnover play was successful by 49 %. Teams could not be so successful after unexpected, unforeseen technical mistakes when arranging turnover play needed a much better improvisational skill, this way its effectiveness fell to 31 %.

In offensive-defense, substitution influences the teams negatively in this respect, too, as they show results 10% to 12 % worse. Success of Group 1 regarding shot balls is 43 %, following technical mistakes it is 25 %, compared to Group 2' standing at 53 % and 38 %.

It is important how much time is needed for turnover play, or how long it takes to organize it. (Table 10) There is difference in case of direct initiations, extended fast breaks and fast throw-off. At initiations, following from the structure, 1 or 2 players take part in the offense, and it also takes a shorter time. Therefore in this case mainly the number of returning players determines the success, which does not require particular organization each time. Thus it can be effective in 2 seconds but the effectiveness of the turnover play as a whole is low. At

extended fast breaks process of the offense takes place with all the players in several waves, so the effectiveness depends on not only the number of returning players but also on being organized. The time passed is not necessarily in direct relation to the rise in effectiveness, it shows a varied picture. It can be seen that the overwhelming majority of extended fast breaks happens in 4 to 6 seconds, i.e. this period of time is available for arranging effective organized retreat.

Group 1 shows a worse value in almost every time interval. It is striking until 5 seconds, over it, however, an intensive improvement is seen thanks to arriving defense players.
Group 2 can be effective in a short time (4 seconds), afterwards uncertainty and variations can be observed. It is often due to the determining shooting players coming to the offense team, from substitutions.

Active defense action

The active defense action (breaking the ball carrier's movement and impulse, decreasing the chance to pass the ball, or hindering the player's activation without ball) is worth being started on the space which is far from the goal outside the shooting area but is restricted to an area where defense players can effectively cooperate. Offense teams can play the midcourt very easily now, this is why, apart from the size of the area, the area of starting the active defense is restricted to the defense third zone, 13-14 m from the goal. (Table 11)

It makes you think that defense players only in 30 % of the cases could interfere effectively (fault) in order to stop fast breaks. Poorer results of Group 1 derive from the fact that the players specilized in offense are not prepared to defend, in every respect.

The precondition of an active interference is the deliberate cooperation of defense players in satisfactory number. It was seen in 41.5 % while in 58.5 %, independently of the number of players in turnover play, they could only react in a spontaneous way. (Table 12) 13-14 m from the own goal in the defense zone at least four defense players must return to make pointed action possible. Suprisingly, even in case of 4 players spontaneity was more general (44 %) than deliberateness (35 %).

In Group 2, in 57 % of the cases more than 4 players performed turnover play, and then they acted deliberately as well in 45 %. In Group 1 it was less (45 %) but their cooperation even so was in 27 % deliberate. It also confirms that teams which substitute are less capable to interfere effectively against fast breaks.

Cut off the players in the first wave

During the turnover play it is important that the defense players should put the offense players in such an unfavourable position that they could not be successful. In 35 % the shooting players finished the fast break so that they could not or did not want to cooperate with the players running up in the first wave. This time defense was 56 % successful, and 44 % finished with scoring. However, in 58 % the wing and line players finished the offense, after contacting the shooting players. This way only 20 % was a successful intervention, while in 80 % there was shot (Table 13). As the shooting-through player can be neutralized more effectively, it would be an important target to increase the rate of cutting off the players arriving in the first wave. This was executed by Group 2 in 45 % and by Group 1 in 30 % only, but besides, the good defense was also more effective, 61 % compared to Group 1 where it was 51 %. Exception is made by finishing after a shooter – line player combination, after this Group 1 was 31 % successful, while Group 2 only 15 %. In spite of that, all in all the good defense in Group 2 shows an 8 % higher value.

5. Results
Discussion

My survey has acknowledged my assumption, according to which if I examine the turnover play, confirming the necessity of deliberate tactical action in this element as well, working out an effective defense action can be made more concrete.

- In contrast to executing the offense off line, execution from a distant zone is more disadvantageous in terms of organized retreat. In this case the number of returns was higher altogether. After executing actions with shots the difference was 10 % compared to executions off line. The explanation can be that in case of execution from distance the conditions for the players are more unfavourable due to their position regarding the initiation of turnover play. It is supported by the fact that considering time of initiating offense – wherever the execution of the offense happened – there was no difference in the success of the turnover play. Regarding the number of returning players in time (first), the number of cases of inadequately returning players (0-2 players), however, was 20 % higher after the actions executed from distance.

  As a result of the accelerated game, the number of unexpected shots (without preparation) has increased, it shows that following the execution of offense with changing positions, the difference in the numbers of returns was 30 % in favour of actions executed from a distance. It means that the role of anticipation skills is also important.

  It is also proved by the fact that – wherever the execution of offense took place – 45 % of the returns were caused by technical mistakes.

  It is obvious that in view of advantages and disadvantages of offenses executed off line or from distance and their influence on the turnover play, the difference is in the extent of anticipation skills. At present it causes the greatest difficulty in initiating the turnover play.
- The importance of the time factor has been proved. On the one hand, at starting offense, 2 or 3 seconds are available on the average to initiate the turnover play and get prepared for facing the offense. This time can compensate the more unfavourable position for initiating the turnover play in case of shots from distance as well as the disadvantages occurring due to the lack of anticipation skills. It is acknowledged that

regarding effectiveness of organized retreat (40 %) there was no difference in terms of from where the offence was executed. After more than 3 seconds the intention to start fast break fell to the fraction.

On the other hand, the time of fast breaks is 4 to 6 seconds on the average. After this time the effectiveness of execution decreases to a great extent. As long as the players in turnover play can force the offense players to perform their fast break just in 6 to 8 seconds or more on the average (breaking by this the impetus and dynamics of the offense), the rate of success is low.

- It has been proved that the departing players must be stopped by all means or they must be slowed down in order to avoid scoring chances.

  For this the cooperation a sufficient number of defense players is needed. Thus it could be seen that even in case of 4 players spontaneity prevailed over awareness. This way the low level of active defense action (30 %) was not surprising, which questions the chances of effective turnover play.

  It is a great leap forward that the effectiveness of turnover play was at 50 % after executing the offense by scoring (by planned tactics). An effort can be seen on the teams' part to perform a deliberate, systematic turnover play, which functions only under certain circumstances now.

- It has been proved that it is inevitable to organize the cooperation of players in the turnover play on the basis of tactical considerations.

  The teams successfully completed this in one third of turnover plays, and defense was 56 % successful. This time they successfully decreased the playing space of the offense by blocking the line players from the offense. By hindering the wing players in being playable, they managed to restrict the offense to the inner part of the court . By neutralizing the line players, executing of the offense (shooting the goal) is moved away to a distant shooting area. The shooters can be neutralized more effectively as well, not to speak of the fact that on the basis of the data it can be stated that shooting from a distant zone is taken on by less players due to the poorer probability of success.

- It has been proved that the teams using substitutes during the offensive-defense were able only to achieve results that were 10-15 % worse in all tested segments. Turnover play has limits in time, which can definitely influence the effectiveness. It is a complex and complicated responsibility. During turnover play the offensive-defense substitution cannot be performed without decreasing the effectiveness of defense action (e.g. temporary numerical inferiority, loss of time).

Conclusions

It has been outlined that the turnover play is one of the most difficult elements of the game tactically. Its successfulness is influenced by a number of circumstances that cannot be foreseen from the beginning to finishing of the turnover play. Their consequences come about from each other, and they are in interaction therefore working out its tactics does need very subtle work indeed.

I managed to highlight the complexity of the tested area's components but I have not had an opportunity to reveal relations fully and in depths. I did not manage to reveal how much the spot and way of executing after different kinds of offenses determine the responsibilities and direction of movement of the individual players during turnover play and further on; in what system the teams, due to their style, accomplish the turnover play after execution. How much was it influenced by the substitution during offensive-defense. Lacking the above, I only managed to focus on the results of activities during the turnover play.

The level of effectiveness may be ambiguous but there are tendencies which are followed by the players to succeed in meeting the challenges of modern handball game rating the turnover play as one of the basic phases of the game.

My thesis can help to find out on the basis of what viewpoints it is worth starting it and finally achieve that defense actions result in effectiveness and awareness in the course of the turnover play, in all the phases.

6. Tables

Enclosure 1: Matches examined

1. 2012. 05. 27. THW Kiel – BM Atletico Madrid 26:21 (13:10)
2. 2012. 05. 26. Füchse Berlin – THW Kiel 24:25 (12:15)
3. 2012. 05. 26. BM Atletico Madrid _ AG Kobenhavn 25:23 (12:15)
4. 2012. 04. 21. Croatia Osiguranje Zagreb – THW Kiel 31:31 (15:12)
5. 2012. 03. 25. MKB Veszprém KC – Reale Ademar Leon 27:25 (16:12)
6. 2012. 03. 25. FC Barcelona Inter Sport – Montpellier AHB 36:20 (17:8)
7. 2012. 03. 24. RK Cimos Koper – KS Vive Targi Kielce 25:23 (12:13)
8. 2012. 03. 18. HC Metalurg – Croatia Osiguranje Zagreb 19:18 (7:9)
9. 2012. 02. 26. RK Partizan Beográd – Montpellier AHG 20:30 (7:16)
10. 2012. 02. 26. Petersburg HC – Orlen Wisla Plock 24:32 (12:16)
11. 2012. 02. 25. MKB Veszprém KC – BM Atletico Madrid 28:27 (10:11)
12. 2012. 02. 25. Chambery Savoie HB – HC Bosna BH Gas Sarajevo 40:19 (20:11)
13. 2011. 12. 18. Montpellier AHB – Pick Szeged 29:26 (17:14)
14. 2011. 12. 04. Pick Szeged – AG Kobenhavn 31:34 (17:19)
15. 2011. 12. 04. Bjerringbro – Silkeborg – MKB Veszprém KC 19:25 (5:14)

Table 1: Test sheet

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Defense formation																									
Offense formation																									
Type of offense																									
Area of execution, who																									
Result of execution																									
Time of starting offense																									
Way of starting																									
First return, delay																									
Area of starting running																									
Number of passes																									
Returning players to defense zone																									
Result of running back																									
Area of execution, who																									
Way of running back																									
Time of initiating																									
Area of the first interference																									
Role of goalkeeper																									
Line player – shooter cooperation																									
Side																									

Table 2: Result and distribution of turnover play

Result of turnover play	Playing time in minutes						1st half	2nd half	Total
	0-10	11-20	21-30	31-40	41-50	51-60			
Goal	28	36	32	36	39	35	96	110	**206**
Saving	21	16	8	15	19	6	85	40	**85**
Total	49	52	40	51	58	41	**181**	**150**	**291**
Fail	11	12	14	11	10	4	37	25	**62**
Technical	8	7	1	2	4	1	16	7	**23**
Fault	16	13	12	8	12	8	41	28	**69**
Recover the ball	7	8	5	6	4	9	20	19	**39**
Total	**42**	**40**	**32**	**27**	**30**	**22**	**114**	**79**	**193**
Σ Total	91	92	72	78	88	63	**255**	**229**	**484**

Table 3: Influence of defense formation and ways of offense on the frequency of turnover play

Way of defense	Way of offense before turnover play				
	Keeping position	Changing position	Combination	Initiation	Total
6:0	68	92	51		**211**
Open	61	35	66		**162**
Advantage	13	9	17		**39**
Disadvantage	7	4	1		**12**
Total	**149**	**140**	**135**	**60**	**484**

Table 4: Relation between result of offense execution and number of runnings back

Type of offense	Area of offense execution before turnover play, result											
	Line				Distant					Line total	Distant total	Total
	Goal	Saves	Saves rebound	Techn.	Goal	Saves	Saves rebound	Blocking	Techn.			
Keeping position	6	14	15	39	4	15	12	8	36	**74**	**75**	149
Changing position	5	8	8	28	7	29	20	8	27	**49**	**91**	140
Combination	9	12	9	40	6	29	6	1	20	70	65	135
Initiation	6	7	13	13		3	4		14	**39**	**21**	60
Total	**26**	**41**	**45**	**120**	**17**	**76**	**42**	**17**	**100**	232	252	484

Table 5: Relation between offense execution and number of returns in case of two teams

Type of offense		Area of offense execution before turnover play, result in case of teams using substitutions and not using substitutions											
		Line				Distant					Line total	Distant total	Total
		Goal	Saves	Saves rebound	Techn.	Goal	Saves	Saves rebound	Blocking	Techn.			
Keeping of position	**1**	3	6	5	17	3	5	6	3	19	**31**	**36**	**67**
	2	3	8	10	22	1	10	6	5	17	**43**	**39**	**82**
Changing of position	**1**	1	4	5	17	5	17	10	6	14	**27**	**52**	**79**
	2	4	4	3	11	2	12	10	2	13	**22**	**39**	**61**
Combination	**1**	3	9	3	25	5	15	2		10	**40**	**32**	**72**
	2	6	3	6	15	1	14	4	1	10	**30**	**33**	**63**
Initation	**1**	5	4	5	9			2		9	**23**	**11**	**34**
	2	1	3	8	4		3	2		5	**16**	**10**	**26**
Total	**1**	**12**	**23**	**18**	**68**	**13**	**37**	**20**	**9**	**52**	**121**	**131**	**252**
	2	**14**	**18**	**27**	**52**	**4**	**39**	**22**	**8**	**48**	**111**	**121**	**232**

1=Team using substitutions

2=Team not using substitutions

Table 6: Fast breaks following offense execution and their characteristics

Execution		Way of fast break following defense and area of extended fast break													
		Initiation			Extended fast break			Throw off			Initiation total	Extended fast break total	Throw off total	Total	
		Right	Center	Left	Right	Center	Left	Right	Center	Left					
Line	1	7	12	15	7	30	23	1	5	2	34	60	8	102	
	2	11	13	15	14	40	21		13	4	39	75	17	131	233
Distant	1	12	27	22	16	19	25		8		61	50	8	119	
	2	10	18	15	13	48	19		7	2	43	80	9	132	251
1 total		19	39	37	13	49	48	1	13	2	**95**	**110**	**16**	**221**	
2 total		21	31	30	27	88	40		20	6	**82**	**155**	**26**	**263**	
Total		40	70	67	40	137	88	1	33	8	**177**	**265**	**42**	**484**	

Table 7: Time of initiating offense after recovering the ball

Execution		Time of offense initiating following defense fast break																		
		Initiation time (seconds)						Time of extended fast break (seconds)						Time of throw off (seconds)			I total	E total	T total	Total
		0	1	2	3	4	More	0	1	2	3	4	More	3	4	More				
Line	**1**	8	12	10	4			9	13	12	16	**8**	**2**	5	**3**		34	60	8	102
	2	5	21	10	3			2	16	20	20	**14**	**3**	9	**8**		39	75	17	131
Distant	**1**	13	23	17	6	**2**		2	8	13	20	**5**	**2**	7		**1**	61	50	8	119
	2	8	17	6	5	**5**	**2**	9	13	19	20	**16**	**3**	7	**2**		43	80	9	132
1 total		21	35	27	10	**2**		11	21	25	36	**13**	**4**	12	**3**	**1**	**95**	**110**	**16**	**221**
2 total		13	38	16	8	**5**	**2**	11	29	39	40	**30**	**6**	16	**10**		**82**	**155**	**26**	**263**
Total		34	73	43	18	**7**	**2**	22	50	64	76	**43**	**10**	28	**13**	**1**	**177**	**265**	**42**	**484**

Table 8: Numbers of returning players in time and early returning players

Execution		Number of returning players at time of following offense execution											
		Line						Distant					
		Number of returning players											
		0	1	2	3	4	5	0	1	2	3	4	5
Initiation	***1***	*6*	*7*	*14*	*8*	*6*		*5*	*13*	*25*	*13*	*3*	
	2	*5*	*5*	*10*	*8*	*2*	*1*	*6*	*10*	*19*	*7*	*4*	
Extended fast break	***1***	*1*		*15*	*17*	*22*	*11*	*1*	*5*	*14*	*15*	*16*	*11*
	2		*2*	*10*	*23*	*24*	*10*		*7*	*16*	*19*	*19*	*7*
Throw off	***1***				*3*	*2*	*7*			*1*	*5*	*2*	*4*
	2			1	3	4	6				1		3
Total 1		**43 (36%)**			**76 (64%)**			**64 (48%)**			**69 (52%)**		
Total 2		**33 (29%)**			**81 (71%)**			**58 (49%)**			**60 (51%)**		
Total		**76**			**62**	**95**		**122**			**60**	**69**	

Table 9: Result of turnover play following offense execution

Effectiveness of returning		Area of offense execution, result											
		Line				Distant					Line total	Distant total	Total
		Goal	Saves	Rebound	Technical	Goal	Saves	Rebound	Blocking	Technical			
Goal	**1**	7	5	8	38	3	14	6	7	32	**58**	**62**	**120**
	2	9	3	6	22	1	17	5	3	20	**40**	**46**	**86**
	Total	**16**	**8**	**14**	**60**	**4**	**31**	**11**	**10**	**52**	**98**	**108**	**206**
Saves	**1**	2	4	2	12	3	11	2	1	8	**20**	**25**	**45**
	2		5	6	12	1		7	1	8	**23**	**17**	**40**
	Total	**2**	**9**	**8**	**24**	**4**	**11**	**9**	**2**	**16**	**43**	**42**	**85**
Fail	**1**	1	7	2	5	1	4	4		3	**15**	**12**	**27**
	2		2	8	4	1	6	6	1	7	**14**	**21**	**35**
	Total	**1**	**9**	**10**	**9**	**2**	**10**	**10**	**1**	**10**	**29**	**33**	**62**
Technical	**1**		2	1	4	1	1	2		3	**7**	**7**	**14**
	2	1			5		2			1	**6**	**3**	**9**
	Total	**1**	**2**	**1**	**9**	**1**	**3**	**2**		**4**	**13**	**10**	**23**
Fault	**1**	2	2	4	4	5	3	3		2	**12**	**13**	**25**
	2	4	4	7	5	1	9	5	3	6	**20**	**24**	**44**
	Total	**6**	**6**	**11**	**9**	**6**	**12**	**8**	**3**	**8**	**32**	**37**	**69**
Recovering the ball	**1**		2	1	5		5	2	1	5	**8**	**13**	**21**
	2		5		4		4			5	**9**	**9**	**18**
	Total		**7**	**1**	**9**		**9**	**2**	**1**	**10**	**17**	**22**	**39**

Table 10: Influence of initiation time on the effectiveness of turnover play

Way of initiation, result			Time of fast break (seconds)						
			2	**3**	**4**	**5**	**6**	**7**	**8**
Initation	**Clear scoring chance**	**1**		16	38	18	9		
		2	3	14	27	8	5		
	Not successful	**1**	**10**	**3**	**1**	**1**	**4**		
		2	**7**	**4**	**5**	**3**		**2**	**1**
Extended fast break	**Clear scoring chance**	**1**		2	10	20	21	10	3
		2		2	5	13	23	4	11
	Not successful	**1**	**3**	**7**	**5**	**12**	**19**	**10**	**5**
		2	**1**	**7**	**11**	**17**	**17**	**13**	**11**
Fast throw off	**Clear scoring chance**	**1**	1	7	3	2	1	2	
		2		1	6	4			
	Not successful	**1**	**2**	**5**	**1**	**1**			
		2			**4**	**1**	**2**		

Table 11: Optimum area of initiating defense action

	Area of interference			Total
	Offense half	Defense half	Defense zone	
1	5	7	**49**	**61**
	2,0%	2.7%	**19.5%**	**24,0%**
2	11	9	**57**	**77**
	4.7%	3.8%	**24.5%**	**33,0%**
Total	16	16	**106**	**138**
	3.3%	3.3%	**22,0%**	**28.5%**

Table 12: Number of returning players and chance of cooperation

turnover play		Returning players to the defense zone							Total	Total
		0	1	2	3	4	5	6		
Spontaneous	1	29	34	32	30	28	17		170 (67%)	283 (58,5%)
	2	17	25	22	22	16	11		113 (49%)	
Deliberate	1		**1**	**3**	**10**	**11**	**31**	**26**	**82 (32%)**	**201 (41,5%)**
	2			**5**	**8**	**24**	**51**	**31**	**119 (51%)**	

Table 13: Effectiveness of defense against players coming from different offensive positions

Defense		Executing offense player			
		Wing	Shooter – line player	Shooter	Total
1	Bad	84	45	36	165
	Good	**13**	**28**	**34**	**68**
2	Bad	43	56	38	137
	Good	**9**	**12**	**60**	**81**
Total	Bad	127	101	47	302
	Good	**22**	**33**	**94**	**149**
Total		149	134	168	451

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THE TRAINING SYSTEM OF YOUNG PLAYERS AGED 7-8 AT AUDI ETO

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Abstract

Introduction:

The training of the next generation was always ranked among the best, not only in Hungary but Europe as well

We can be proud of names like Pálinger, Görbicz, Herr O, …, and we can continue the long line of excellent players from senior and junior reps or those who are members of outstanding Hungarian and European clubs.

The changing social circumstances and the developing tendencies in this sport branch have required a new way of thinking in the educational system. My thesis tends to present this viewpoint starting from the selection of the next generation or the possibilities for different age-group to compete up to the professional handball techniques. We have paid a distinctive attention to work out a special competition system of our own which supplies proper technical and tactical elements needed in professional handball.

My work deals with the possibilities to harmonise the young players' school education and sport activities. It also presents the academic operation of handball and its recorded results. This system has been working for 5 years and the players coming from it are members of the Hungarian first class.

Methods

To prove the effectiveness of this system I have set up some hypothesis and compared the forms of trainings and results in Hungary with the ones of other countries' and sport branches. The correctness of these hypothesis has been proven by the efficiency in Hungarian league competitions and the growing number of reps as new generation players along with their role in the world performances.

Results and Discussion

The results of the Hungarian league competitions in the last 2 years and the growing number of players coming from Audi ETO in world performances are direct evidences of the correctness of this sytem.
In 2011 there were 7 players who took part in the Ech matches finishing in the 4th place. In 2012 there were also 7 players in the youth WCh gaining 5th place and in the same year we could be proud of 8 players winning the 3rd place.

Keywords – selection, new generation in competitive system, educational system of the new generation, academy of supplies

1. GENERAL INTRODUCTION

1.1. About youth training in general

The training period of young players starts with familiarizing with the sport and ends with playing handball on a professional level. Typically for team sports, however, not all the children have the skills and endurance to achieve the final goal. Even though not all of them reache the international or NB I level, but based on the classification they can still pursue their career in lower divisions.

The youth training is influenced by a lot of factors. The governing principles of the training have to be aligned with international progressive tendencies; and the material to be taught should be adjusted to age characteristics. This concerns the development of physical skills, as well as technical and tactical training. Versatile training forms are to be applied. The multidimensionality of handball makes it inevitable to acquaint players with other sports and to use the training drills of these sports.

1. 2. The selection

The issue of selection has always been a central topic in the training of the young generation. One of the questions is what indicators to use to filter out the best and the most appropriate players. What are the selecting exercises or methods that provide the most accurate result? Nevertheless, we can be sure about at least one thing: the bigger the group of children to choose from, the better chance to find the most suitable ones.

„The selection for competitive sports is a process taking several years, where the children are selected from the population based on their motor skills and physique that are above average, and during the youth training they are regularly and methodically observed, tested on a chosen sport in order to make a presupposition on the capability of the player for a certain event."

(Harsányi, László 2001., my translation)

This statement indicates that the selection is a long and continuous process, since the development of individuals is not the same.

Those who's development is going in a slower pace are often left out of the training for this reason.

Methods of selection:

* *Based on the coach's experience*. This is the method of the "clear-eyed" and accomplished coaches having worked in youth training for a long time. Its flaw is that it does not give enough information on every indicator, and other methods are needed as well.

* *Based on the success in competitions.* The players performing persistently well on the junior matches draw the attention of the coaches on their excellent skills. This is similar to the method described above, however, it points out the importance of success as a motivating factor.

* *The passive method* virtually means the pyramid system, where the broad base of the pyramid means the beginning of the youth training and its summit the professional sport. It is easier to find a talented player from a bigger crowd; this is the principle of this method.

* *The indirect method* is based on the player's reaction on training load. The development of equally talented players differs under coaching. This may answer the question of how trainable a player is.

* *The scientific method of sport talents* gives the list of the most appropriate players the most accurately. It includes the selection of the talented, the determination of the criteria for the selection, the elaboration of the indicators of the selection, the organization and the prognosis.

To sum up, the complex application of the above listed methods may lead us to the best and the most accurate selection.

2. HISTORICAL OVERVIEW

Handball has always had great traditions in the city of Győr. Throughout the years women's, as well as men's teams have achieved a lot of beautiful results. This sport has been taught in a great number of schools and associations. Thanks to this outstanding work plenty of excellent players were trained for their clubs and the Hungarian handball.

Audi ETO and their predecessors in title have always considered the training of young players extremely relevant.

In 1968, the starting of Rába ETO Sports School can be regarded as the beginnings of proper systematic training. Prior to this, as a result of the 1962 primary school, and the 1965 secondary grammar school curriculum – not waiting for the central arrangements – a few enthusiastic Physical Education teachers in some schools organized sports schools. These – with their exceptional performance drew the attention on themselves, and consequently the National Sports Committee made a proposal for the Hungarian Council of Physical Education and Sports Science to establish a national sports school network. By 1963 there were 11.805 children playing some kinds of sport in 53 sports schools altogether.

From the 1969/70 school year the MM 50 716/1969 regulations made it possible to organize classes with specialized curriculum of Physical Education in primary schools. A year later the 120/1970 (MK10) MM instruction made it also possible for secondary schools to open classes with specialized curriculum. These institutions worked with more Physical Education lessons (5-6 lessons a week), keeping in touch with clubs and sports schools.

The Rába ETO Sports School operated with 12 specialized classes, including women's handball. The sports school closely cooperated with the city's 6 primary schools and a secondary school all specialized on Physical Education. Naturally, they were monitoring the talented players in other educational institutions as well.

In the first four years of the primary schools specialized on Physical Education there was only general training. At the start of the fifth grade every pupil spent 2 weeks on the trainings of other specialized classes. Here the specialists could select the child most appropriate for their sport; in addition the students got an insight into the offer. The secondary schools specialized on Physical Education were linked to this system by directing the most talented students to these schools, helping to make up for the lessons that the students missed because of sporting.

Until 1986 The Rába ETO Sports School continued its outstanding and effective work, when the Hungarian Railway Carriage and Machine Works Plc., that controlled the sports association and the sports school, put an end to a number of its sections including the women's handball. Thanks to the enormous work of the city's and the county's sports management almost every sports representative was offered a job for the future; however, the well-organized and managed system fell apart, and it has not been replaced in some sports, neither has a new youth training method been organized instead.

In those times the women's handball became the team of Győri Richards, playing in NB I B. Thanks to the players from the ETO sports school this association shortly got into the first class; this can be regarded as the predecessor of today's Audi ETO. After the termination of Richards SE, with the help of the city the team figured under the name Sports Centre SE (Sportközpont SE), finally returning to the name ETO in 1992. During the Richards period the youth training was fairly disorganized. The basis of the club consisted mainly of Physical Education teachers committed to their work. After the regime change the system of sports schools and Physical Education classes was disintegrated. The changes urged some enthusiastic Physical Education teachers to try new methods of training young players. Together with my colleague Takács Miklós we started to form a handball based primary school class in the well-equipped Balázs Béla Primary School, assigned in 1985. The institution stood in the circle of a housing estate being built at the time; the number of children was above one thousand for several years. Thus the security of selection was guaranteed. The students got into the handball classes after the fourth year. We managed to achieve that every fourth grade was taught by a handball P.E. teacher; hence we got a clear picture

about the skills of our students. Besides 4 P.E. lessons and a swimming lesson each week, the program also contained afternoon trainings. Competing was the toughest task, because in those times there was not any other possibility to compete than at the Students Olympics. Nonetheless, with the well developed system of relationships between the schools working on the same basis we managed to solve this problem. The efficiency of handball classes is obvious from the training of players mentioned at the beginning of this thesis.

3. REASONS FOR CHOICE OF TOPIC

The historical overview of the previous part was written about the organization of primary schools with classes concentrating on handball. In 2007, after five years working as a head coach, I was appointed as the head of Audi ETO junior department. I was shocked to see that the above mentioned youth training program was not able to fulfil the requirements. As a result of the demographic problems there was a cut-back in the number of students at the Balázs Béla Primary School; consequently the possibilities for selection were far from being optimum. On the lowest level of youth training the number of children was critically small. The adolescent and junior teams were filled in with transfers from other teams. Therefore I suggested to the leaders of the club to work out a new youth program. After the suggestion was accepted, we established the new model for Audi ETO, which was founded on the general principles of selecting talented children, as well as implementing new elements; and which came to realization after several years for children between the ages of 7 and 18. During primary school the training was based on elements that had stood the test of time. In secondary school the academic qualification was included as a new component, which alongside with handball training with increased number of lessons and the adjusted teaching and learning system, supported the last part of selection. In my thesis I would like to demonstrate the processes, phases and experiences of this method for the benefit of every coach working with young players.

4. HYPOTHESIS

In the coaching of young players we followed the principles accepted in sports science. We estimated the training period from the age of 7 to 18. According to the pyramid method, we dealt with a large number of children. With the higher age categories and the continuous selection we get to the last - the best quality – level.

- As I see it, the increased number of children at lower levels ensures better opportunities for more talented players to get into the system.

- Since there are more young people engaged with this sport than in the previous training model, the number of handball fans increases. Thus those players who were not able to get to higher divisions can raise the standards in lower divisions, or can function in other areas of this sport (games masters, referees, coaches).

- I suppose that the open championship started by Audi ETO – together with the rules determined by us and with the compulsory defence tactics – will contribute to the versatile development of our players, and their technical skills will approach international level.

- As the system includes not only the training of players, but the continuous qualification of the participating coaches as well, it will result in more qualified coaches working with young handball players.

- The academic character of the training – with its educational aims and methods – helps to develop a highly qualified rising generation where studying and doing sports is in appropriate proportion, where the lags in learning because of matches or fitness camps are recoverable.

- The academic system prepared by us wishes to look after those students as well who were not able to fulfil the requirements of the professional sport. We prepare such forms of trainings and qualifications for them to be able

to succeed in their future lives. I presume that all of these things will help to form a sport-loving society.

5. PHASES OF FORMING THE TRAINIG SYSTEM OF AUDI ETO

Since there had been an efficient – but not perfect – system before, we wished to keep all the positive elements of it. This was aimed at the cooperation with our existing base school, and the retaining and appreciation of coaches in clubs working on a high level with the new generation.

1st phase:
The formation of the mass-base:

This was done through increasing the number of schools in contractual relationship with ETO. Since we planned to develop a slower, but more reliable system, we were looking for cooperative institutions for the training of 7-8 year olds. With appropriate propaganda and personal acquaintances we managed to find groups from the city of Győr and its surrounding towns, and even from the southern part of Slovakia (from Great Rye Island - Csallóköz). However, the majority of them had already dealt with teaching handball; they accepted the terms and conditions determined by ETO. This regarded the content of training, the competitions, the remuneration, etc.

Eventually we succeeded in our work, as there where 12 institutions that joined our first meeting. The number has been rising ever since. In December of the first year there were 400 children on the Christmas festivities organized by our club, who received the clubs presents from the members of the adult team. This event has become an annual tradition in our club.

Naturally, schools located close to teams of higher classes were also put into the system.

2nd phase:

I wish to deal with competitions and contesting in a separate chapter, however, I would like to emphasize here that the hinge of Hungarian handball is the proper system of competitions for the rising generation. Therefore we worked out one

that ensures permanent possibility to play, and that could be constantly followed by the specialists of the club appointed for this task. We have taken the international requirements into consideration concerning the technical skills of players. We made rules and tactical elements compulsory in each age category: with this we believe players can be supported to acquire the most up-to-date technical and tactical knowledge. At the ETO Championship, which we had declared as open, in the first year there were more than 30 teams involved in 5 age categories. This year 64 teams have enrolled to the challenge.

The matches are played in Győr all expenses – organizational and those connected with awarding - are on ETO. There is no registration fee. As a prize every participant gets a T-shirt with the emblem of the championship and the club. In this phase it has become regular to have a training course for the coaches. The focus of these courses consists of processing the basic mechanics, as well as the correction of the typical errors that had been pointed out by our experienced colleagues. The training courses are open for everybody, and are compulsory for our coaches. The lectures are held by invited specialists, together with colleagues from Győr.

3rd phase:

Our next step was to create the academic training. With this we wanted to establish high quality training adequate for students wishing to continue in their studies after secondary school.

ETO considered multiple possibilities of starting the academic training. As I have been teaching in the Bercsényi Miklós Secondary School of Transportation and Sports School Methodological Centre, this institution came into view as a synergetic partner. Another thing that accounted for this choice was the sports tradition of that school: since the 1970s there have been a Physical Education course within the walls of this secondary schools with such students as Zsolt Borkai Olympic Champion, Szilveszter Csollány Olympic Champion, Csaba Fajkusz, Attila Ábrahám, Katalin Povázsán, Kinga Czigány, Barbara Pethrán, Katalin Pálinger, Krisztina Pigniczki and so on with other Olympic sportsmen and sportswomen. The institution’s material conditions are high above the Hungarian

average. 20 m x 40 m sports court, 40 m long indoor running track, and there is a Rekortan athletics track available in the neighbouring Dózsa sports centre suitable for international competitions. Moreover, there are specialists teaching at the institution namely Tóth Lászlóné, Csaba Konkoly trainer, who led the adult team of Audi ETO. Thus, alongside with me, such a professional stuff works with our players that have experience not only as coaches of the raising generation, but in adult handball as well. I will deal with the academic training in a separate chapter.

4th phase:

The training of the young generation at ETO has also been characterized by being competitive. Since our teams have excelled themselves in their age category, they have been competing with adults as well. According to our experience the youth can cope with NB II, and juniors with NB I/B championships. Here they have the opportunity to play matches where they can apply their technical and tactical knowledge in more difficult situations necessary for their development. Naturally our teams can participate in championships corresponding to their age group; these various opportunities for competing ensure that our young people can play according to their present conditions. This requires a serious cooperative mind and teamwork for the sake of the children from every coach concerned. This work is directed by the junior head coach.

However, for many years the situation of the players superannuated from the junior age group has been a problem. The best got into the professional adult team, but a lot of them had not been prepared for this. They were lent to other NB I teams, where they were given little opportunity to play because of their young age and lack of experience; thus a lot of them could not come up to our expectations. Among these children there were only a few who could be transferred back because of their performance. Therefore the club decided that it will insure an opportunity to participate in NB I for the junior players who are not yet ready to play in adult teams; thus playing together without stress, they could prove where their place is in the life of the club and in Hungarian handball. In the 2011/2012 championships season our junior team won the NB I-B western group's championship without losing a match. Consequently the team could have been entitled to participate in the first division, but referring to certain rules, the

MKSZ (Hungarian Handball Federation) did not allow it. At the same time there was an opportunity to get in touch with the NB I team of Veszprém Barabás, who were planning to stand down from the highest division due to financial problems. After the negotiations there was an arrangement between the clubs that those players from our club who were mature enough to change divisions were transferred to the city 80 km far from us. Both sides benefited from this, because Veszprém could keep their NB I membership, and ETO could provide those talented players with opportunities to play, who could be transferred back to its professional adult team after they had gained some experience.

6. THE PURPOSES, TASKS AND OPPORTUNITIES FOR COMPETING IN DIFFERENT AGE GROUPS

7-8 year olds:

Aim:

- familiarization and endearment of the sport
- using the ball as the plaything
- trainings that provide a lot of sense of achievement
- improving movement coordination with the help of specific drills, P.E. games appropriate for the age
- starting the journey towards handball with the help of inductive games
- learning the technique of sponge handball together with the game rules

Tasks:

- teaching basic athletic movements
- improving the throwing skills with playful exercises
- bouncing balls in different sizes
- switching directions, faking in tug games.
- playful trainings with the help of P.E. games
- familiarizing and using the game rules in various games according to age characteristics

Competing:

Every month Audi ETO organizes a competition for this age group. The aim of the competition is participation and good mood. We try to give every child some kind of simple reward; however, we award the best ones, not over-emphasizing the efficiency. Within this age group the youngest players compete in a game called "Two-goal thrower". For those who are not beginners in handball we arrange competitions in sponge handball.

9-10 year olds

Aims:

- trainings with balls according to age characteristics
- familiarizing with the basic technique of playing handball
- acquiring and using the rules of handball
- regular participation at championship matches has to foster the love for this sport and the formation of the public spirit

Tasks:

- refinement of the athletic movements
- teaching the technical and tactical element assigned in the curriculum
- creating the aggressivity inevitable for the game, alongside with the creation of the spirit of fair play
- development of skills according to age characteristics
- establishing of the basics of the open and man-to-man defense systems

Competing:

- taking part at Audi ETO championships
- Erima championship announced by MKSZ (Hungarian Handball Federation)
- other cups organized by schools and clubs
- Students' Olympics

11-12 year olds

Aims:

- starting to form the playing skills
- constant practise of the acquired technical element; their refinement and usage in game situations
- laying down the basics for position consciousness

- making players realize the collective spirit and personal responsibility
- constant improvement of open defence
- training games with man-to-man defence
- forming the basics of anticipation

Tasks:

- widening the range of techniques in goal shooting
- practising various forms of zone defence
- using defence systems on the entire court, from the centre line; and using faking and movement without ball against set defence
- forming the goalkeeping techniques according to the child's physical capability
- realization of simple combinations between two players
- practicing the technical elements needed in fast break

Competing:

- at Audi ETO Championship
- MKSZ's (Hungarian Handball Federation's) Erima Championship
- other cups organized by schools and clubs
- Students' Olympics

13-14 year olds

Aims:

- commitment to the sport
- beginnings of picking the players for positions, shaping the relevant techniques and widening the range of techniques, refinement of the learnt elements
- learning the basic defense tactics, starting to teach new ones
- intense skill development appropriate for the age group
- learning the offensive tactics against disorganized defense
- improving goalkeeping techniques towards conscious saves

Tasks:

- strengthening the children's personality and their competitive features by participating in matches
- by providing sufficient senses of achievement fostering talented players to continue playing handball

- alongside with choosing a position, implementing the specialized technical training
- using the 6 : 0 and 5 : 1 zone defence systems during matches
- familiarizing with mixed defence systems
- practising position switch between two and three players
- shaping the first and second phases of breakthrough
- emphasizing the training of the goalkeeper's offense techniques
- learning the theoretical and practical side of the relationship between the goalkeeper and the offensive player

Competing:

- at Audi ETO Championship
- MKSZ's (Hungarian Handball Federation's) Erima Championship
- other cups organized by schools and clubs
- Students' Olympics

15-16 year olds

Aims:

- training players on national team level
- starting to shape features typical for a professional sportsperson (lifestyle, love of sports, etc.)
- forming and training of the range of techniques of the individual
- shaping the conditional skills appropriate for the age group
- improving game skills
- acquiring more tactical knowledge
- the start of match analyzing and conscious preparation

Tasks:

- improvement of the learnt technical elements; training and refining of those that are the most adequate for the player and of those that are the most successful in the game
- starting to develop physical strength with weights
- learning of further forms of zone defense systems, in open variations, training of defense positions appropriate for the player's skills
- precise realization of the group and team variations of the tactic of fast break with changing and keeping positions

- using offense tactics according to the opponent's defense tactics, fast reaction in case of change
- complex development of the goalkeeper
-

Competing:

- NB I Youth Championship
- Hungarian Junior Cup
- NB II adults' championship
- local handball championship
- MKSZ's (Hungarian Handball Federation's) Erima Championship

17-18 year olds

Aims:

- improving the conditional skills to a level that is expected by a professional level handball player
- constant technical training of the individual, to make those techniques efficient during the game
- integration of more and more players into adult and age group teams
- forming the professional approach
- complex tactical knowledge
- using recorded match analyses, conscious preparation for certain matches
- shaping the rhythm of game typical for first division handball

Tasks:

- familiarizing with features typical for a professional player
- shaping of team tactics in defence and offense
- using transitions from defence to offense and conscious restoration of positions on a high level
- training of the range of techniques for given positions on a level required for NB I
- shaping of defence tactics, and tactical cooperation between goalkeeper and defence players adequate to the goalkeeper's individual technique

Competing:

- NB I Junior Championship

- Hungarian Junior Cup
- NB I Championship (Veszprém)
- NB I/B adults' championship

As for the training material and requirements we use the handball curriculum accredited by NUPI, which is downloadable from the website NUPI.hu from the sports school curriculum's sports block.

7. THE CONCEPT OF COMPETITIONS OF AUDI ETO KC'S JUNIOR AND YOUTH TEAMS

Besides the right amount of quality training it is important for young players to participate in competitions on proper level. This is a hinge of Hungarian handball, because young players either play too less or too much. The fact that even at a young age being successful at matches is overemphasized also hinders the search for talented players.

For this reason coaches tend to choose early tactical training promising much bigger success, instead of meticulous and versatile technical training. As a result there are players growing up without sufficient preparation; moreover those players who need more patient work (taller children for example) do not get opportunities to play and thus they do not have any sense of achievement.

Competing between the ages of 6 and 14:

Being organized by MKSZ, competing starts at the age of 9 with the sponge handball championship within Erima championship. In my opinion at this age the sponge handball should be replaced by handball played on a bigger court and with balls type 0 or 1. The contests are arranged according to years. However, the Erima championship is not able to ensure an adequate number of matches even for those teams that managed to get as far as the finals, not to speak of teams that drop out at the beginning of the championship. That is the reason we organized the Audi ETO Championship for our junior and youth teams. The teams here have the opportunity to play regularly. Since the enrolment is open, we accept registrations from outside of our system, thus the competition will not be intensive. In the invitation for the championship we set such rules that could

enable our children to use and practise the things that they have learnt at the trainings in proper situations. We have taken into account the features of the contemporary professional handball players and tried to adjust to the children's age characteristics. In the championship the children only play with goals and balls adequate in size for their age. The substitution between offense and defence is not allowed and only that defence tactic is allowed to be used that we have laid down.

(The invitation for the championship is in appendix I)

Competing between the ages of 15 and 18:

Our aim is for our children to participate in championships that are appropriate to their level, and that help their development in this sport. The championship invitation of MKSZ prescribes compulsory nominations for the clubs for different age groups. However, these cannot secure the standard that would enhance the development of our players. Therefore our teams play in adults' divisions. The youth (16 year olds) play in NB II, the olders (17 year olds) in NB I/B. Our junior players who have not got into Audi ETO KC adult team, play in NB I sub-team alongside with the most talented younger players. We always keep track of players' actual condition and they are placed into categories or teams accordingly.

8. HANDBALL ACADEMIC CLASSES

Before the club decided about the start of the academy, it had looked into the circumstances of the establishment of sports institutions. Since this kind of qualification was usually typical for football, we visited some of these institutions, we learned about their organization, their connection with the school system, their professional and educational ideas. The majority of these academies are run by foundations. We had to consider the advantages and disadvantages of such an option. The establishment of a voluntary educational institution would have meant serious legal and administrative task, in addition we would have had to run a school, probably a dormitory in line with the rules and regulations of public education. ETO would have found it hard to find a sufficient solution from many perspectives.

The other choice was the academic integration of handball to an existing educational institution run by the state. An important aspect was that the physical means should be absolutely appropriate for the academic training. As the Bercsényi Középiskola works as a state sports school and methodological centre, and it has excellent material conditions as well as having great traditions in training the raising generation, our club has chosen this institution. The work of this kind of state sports schools are coordinated by NUPI (Nemzeti Utánpótlás-nevelési Intézet – National Institution for Training Youth). The institutions ensure the basic service of the public education; ensure the fulfilment of the school age and examinations on different levels. Their work is supervised by the educational government.

The sports institution of public schools provides the training of the youth in cooperation with sports clubs.

According to the arrangement between Audi ETO KC and the Bercsényi secondary school the first handball academic class started in 2010/2011, characterized by its:

Basic concepts:

1. Forming of a health conscious self conduct and lifestyle with the rising generation.
2. Ensuring the base of young players for professional handball.

Aims:

1. Tracing and developing talented sports people.
2. For the sake of the efficiency of the education a working schedule was formed that adapts to the increased time spent with training and competing.
3. Ensures differentiated education.
4. Creates the conditions for catching up after missing lessons because of sport.

9. THE WORK OF ACADEMIC CLASSES

Teaching and learning:

As I have explained before, the classes work as parts of the methodological centre of the public sports school. The regulations about their content are included in the curriculum for sports schools introduced on 1 September 2007. Their legal regulations are included in the modification of the curriculum: Magyar Közlöny 2007/22. issue vol. 1, statute of OKM (Ministry of Education) 9/2007 (27 February 2007).

This curriculum is the basis of the education of academic classes; it ensures the achievement of the common goal in a shorter time, it helps students who came to the academy later or are lagging behind because of missed classes while they were training or playing at competitions.

The curriculum of the sports school consists of two parts:

- general knowledge part
- sport part

The general knowledge part is built up as follows:

Areas of knowledge:

- physical education and sport
- mother tongue and literature
- living foreign language
- mathematics
- people and society
- people and nature
- our Earth – our environment
- IT
- lifestyle and practical skills

The management and the faculty of teachers divided the subjects for the 9-12 classes according to these points.

In addition I would like to mention that the school provides differentiated group work in the case of Hungarian, mathematics and two foreign languages. Thus the students with better understanding can acquire more knowledge and can continue their studied at universities, while the others can prepare for the final exams in smaller groups.

Both the school and Audi ETO do assume it an important goal to provide students with perspectives other than just of a sports career. Therefore besides the secondary school students can participate and graduate as referees. Thus our less talented students can excel themselves as referees at matches in the championships of the city, the county and ETO. Our youth who have a feeling for sports management can become technical or team managers for youth and junior teams.

After the successful final exam they can choose from the following options:

- to continue in their studies at universities
- getting a secondary coaching certificate in organization of the school and the club
- they can continue their studies at Bercsényi secondary school – that is a transportation secondary school as well – in the 13 -14th year, and they can participate in the following courses:
- vehicular-transportation manager
- traffic manager
- railway manager
- air-transport manager
- water-transport manager

Handball and sports training:

9th-10th grade:

At the handball academy - during these two years – our students have 8 lessons per week for training, that includes the technical curriculum of this sport and the

skill development connected with it, alongside with prevention, regeneration and rehabilitation. Of these 8 lessons 2 are swimming lessons.

Besides these 8 lessons they participate in athletic training twice a week; this shall help students to develop the economic running, jumping strength and skills, and in improving the motor coordination.

These 5x2 lessons are every day from 8.00 to 9.30. The 9^{th} and 10^{th} grade participate on these training together divided into 3 groups. There are 18-20 students in each group. The groups are set up according to sex and their level of accomplishment. The groups are changeable. On one hand, the students can get into a higher level group if he has improved; on the other hand the curriculum and the organization of the lesson can change as well (training the goalkeeper, individual training, training for positions, etc.).

The students start learning after 9.30, this continues until 16.00 including a 30 minutes lunch-break.

In the late afternoon students continue the training at Audi ETO in their teams according to their professional knowledge and accomplishments.

11^{th} -12^{th} grade:

In these grades there are less sports lessons. We play handball two times two lessons a week. The reason for this is the final exam and the choice of career; on the other hand by this time those students have already been chosen to play this sport on a professional level. They do intense work at the trainings of the club, ad they can get into the junior or to the adult team. The less talented are handed over to lower divisions in the city or in the county.

10. APPLYING TO ACADEMIC CLASSES

Students can apply to this school from the whole country. However, usually the classes are filled up with children from the system. Our specialists continuously

visit and observe competitions of young players and they guide the talented students to the academy.

During the entrance examinations they pass tests from the prescribed compulsory subjects (a written exam from Hungarian and mathematics). The students wishing to enrol to academic classes have to prove their physical and sporting accomplishments.

Elements of the general physical test:

- bending and stretching the arms in push-ups (they get a point for each successful push-up)
- sit-ups from lying on the back
- trunk-lifting from prone position
- pendulum test

Elements of the handball test:

- bouncing the ball among obstacles
- throwing long distance with handball
- long jump shot on the goal, starting from the free throw-line of the defense area
- skills in games between two players

Based on the scores gained on the theoretical and practical part of the test, the OKÉV (Ministry of Education) prepares the list of accepted students.

11. SUMMARY

Our system that had been built up throughout years has been fulfilled in this year, because as the last step of the process, a team has been formed that plays in the first division. To achieve this, it was inevitable to have a wide basis for the pyramid of young players, then the competitive, training model and the academy. The championship organized by us has already had effects on our youth. Their movements without ball have improved considerably, also their defence; and

technically they are approaching to the requirements of contemporary handball. Our coaches play an enormous part in this, who applies the information and the knowledge they gain on our qualifications and trainings in their everyday work. The improvement in the scholastic records of students in academic classes proves that we have found the balance between learning and doing sports. We have managed to find occupations for those players who dropped out earlier. We have found the proper division for them in the city or in the county; the majority of them have passed the referee's exams and work as such. The strength of this system is obvious from the fact that we have 30 players competing in national youth teams. In recent years our handball players played an important role in the medal-winning teams at international contests.

In the silver medallist team of the 2009 Junior European Championship there were several players from our club: Oguntoye, Hosszú, Deáki, Kovacsics, Szalai, Kisfaludy, Drávai, Horváth B., while in the bronze medallist team of the 2012 Junior World Championship there were: Pásztor, Planéta, Tóth, Horváth D., Schatzl, Pelczéder, Palkó from our club. Kovacsics, Kisfaludy, Horváth B., Planéta have played in the national team and they have become professional players. Every young player in the club is a student. Those in the school age are attending primary and secondary schools. Our juniors attend universities. Two of the students, who were not accepted at universities, are studying at a vocational training of Bercsényi secondary school until the next possibility to enrol to a university. Meanwhile, our students with a successful final exam have started the secondary coach training.

With my thesis work I wished to prove that training the next generation is a crucial point in the life of sport, and I feel privileged to be able to work in a club, where the training of young people is regarded as equal to the achievements of adult teams.

Here in Győr we know that if a club does not respect its past, and does not plan its future, it cannot have a present.

APPENDIX I

Invitation for Audi ETO KC Girls' Open Handball Championship 2012-2013

1. **Organizer: Audi ETO KC**
   In charge: Hoffmann Beáta 20/987-0471
   Andorka Sándor 20/341-3658
2. **Aims:**
   - to ensure regular possibilities for teams of all age groups to compete
   - selecting talented players
   - creating the basic technique training of players
3. **Place:**
   Győr, Bercsényi Secondary School, gymnasium (9025 Győr, Cinka P. 2.)
4. **Time:**
   Once a month for each team, 2 matches on every occasion
   Beginning: September
5. **Participants:**
   Teams registered by sports clubs or educational institutions.
   Age groups:
   a) Girls born after 1 January 2003 (U9)
   Rules: ball type 0
   Court: 20x40 m
   Number of players: 6+1, 12 per team
   Time: 2x12 minutes
   Penalty time: 1 minute
   Compulsory tactic: man-to-man coverage from the centre line in the first halftime, free play in the second halftime
   b) Girls born after 1 January 2002 (U10)

   Rules: ball type 0

   Court: 20x40 m

   Number of players: 6+1, 12 per team

   Time: 2x12 minutes

   Penalty time: 1 minute

   Compulsory tactic: man-to-man coverage from the centre line in the first halftime; in the second halftime use one of the 5-1, 4-2, 3-3, 3-2-1 zone defence systems.

   c) Girls born after 1 January 2001 (U11)

Rules: ball type 1

Court: 20x40 m

Number of players: 6+1, 12 per team

Time: 2x15 minutes

Penalty time: 1 minute

Compulsory tactic: man-to-man coverage from the centre line in the first halftime; in the second halftime use one of the 5-1, 4-2, 3-3, 3-2-1 zone defense systems.

d) Girls born after 1 January 2000 (U12)

Rules: ball type 1

Court: 20x40 m

Number of players: 6+1, 12 per team

Time: 2x15 minutes

Penalty time: 1 minute

Compulsory tactic: use one of the 5-1, 4-2, 3-3, 3-2-1 zone defense systems in the first halftime; in the second halftime free play.

e) Girls born after 1 January 1998 (U14)

Rules: ball type 2

Court: 20x40 m

Number of players: 6+1, 12 per team

Time: 2x20 minutes

Penalty time: 2 minutes

Compulsory tactic: use one of the 5-1, 4-2, 3-3, 3-2-1 zone defense systems in the first halftime; in the second halftime free play.

6. Other regulations:

- If the team does not use the prescribed tactics, the referee warns the coach with a yellow card at first; if it happens again, the referee punishes with a penalty throw. If the tactics of the team does not change after the second penalty throw, having consulted with the competition committee the referee sends the team off. In this case the opponents win the match 2 points with 10-0 goal difference.
- Every team has to hand in a list of players (name, date of birth, certificate from the sports doctor). New players can be added to the list at any time.

- Players can play in teams belonging to older age groups, but if there are more teams registered in the same age group from the same club or school, a player can only play in the team on the original list.
- There is no time-out. Substitutions are only possible when the team owns the ball.
- Man-to-man defence can only be used in during defensive pressure.
- There is a running-clock at the matches that is only stopped in case of injuries.

7. Registration:

There is no registration fee.

Register until: **30 August 2012, on the enclosed application form.**

The competition is open, so teams not belonging to the scope of interest of ETO can also apply.

8. Organization of the competition:

Anyone can apply, but the order of the system of the competition will be set up according to the registrations and the accomplishments of the teams.

9. Awarding:

In each age group 1st -3rd place: cup and a medal.

Every team will get a certificate.

Every registered player will get a keepsake.

Győr, 5 June 2012

Kelecsényi Ernő	Róth Kálmán
chairman	technical director of the junior team

APPENDIX II

Sports Academy Handball class

(According to the curriculum for public sports schools)

	9th grade	10th grade	11th grade	12th grade
Hungarian	**4**	**4**	**4**	**5**
History	**2**	**3**	**3**	**4**
1st foreign language	**4**	**4**	**4**	**4**
2nd foreign language	**4**	**4**	**4**	**4**
Mathematics	**4**	**4**	**4**	**4**
Information Technology	**2**	**2**	**-**	**-**
Physics	**2**	**2**	**2**	**-**
Biology	**-**	**-**	**2**	**2**
Chemistry	**-**	**3**	**-**	**-**
Geography	**3**	**-**	**-**	**-**
Singing	**1**	**-**	**-**	**-**
Drawing	**1**	**1**	**-**	**-**
Physical Education	**4**	**4**	**2**	**2**
Handball training	**8**	**8**	**4**	**4**
Sports theory	**-**	**-**	**1**	**1**
Catch-up courses (supported by NUPI)	**For students falling behind because of the competitions and trainings (8 lessons) Monday: Hungarian, Tuesday: Mathematics, Wednesday: History, Thursday: foreign languages**			
Sports trainings	**16.00 every day, DSE or in clubs**			
Compulsory course chosen from the following: transportation, law enforcement of internal affairs, or preparations for the school leaving exams -		**-**	**2**	**2**
Lesson with the form master	**1**	**1**	**1**	**1**

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Magánkiadás

ANALYSIS OF FAST BREAKS AGAINST DISORGANISED DEFENCE

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Hungarian Handball Association, Hungary

Abstract:

This study was conducted to determine some important parameters of a successful fast break in EHF Men's Champions League season 2012-13.

I set up hypotheses to precisely define these parameters. I tried to support or confute my hypotheses using the results of 132 analysed fast breaks.

Keywords: handball, EHF men's champions league, fast break

Introduction:

All the modern, high-level handball matches comprise continuous actions, exploitation of speed, checking and fast throw-offs. Fast breaks can compensate the technical and physical differences between a weaker and a stronger team. Scoring goals can give a push to the team, as well as motivate the audience. During a game, a significant advantage can be obtained or worked off in a short period of time. Static play – when a 3-4 goal advantage is comforting – is a thing of the past. The fast play has numerical and qualitative requirements from the players' point of view. In order to maintain the increased loading on the players for 60 minutes, they need to be in a perfect condition and mental state. The opportunity of suitable substitutions is also necessary.

Hypotheses:

1. In my opinion, because of the higher game speed, the players run in parallel lanes during a fast break.
2. In my opinion, dribbles on the left/right side and in the middle of the court, occur at about the same rate.
3. In my opinion, the number of fast dribbles, as performing a fast break, has increased, whereas the number of counter-attacks, launched by the goalkeeper, has stayed below 6 per match.
4. In my opinion, scoring goals from a fast throw-off has now become a basic tactic and gets an ever bigger role.

5. In my opinion, the fast breaks, in which the number of passes are 1-3, have the most effective finish.
6. In my opinion, the aim of a team is to create a clear goalshooting opportunity, where the dive shots play an important role. The effectiveness of dive shots is greater than that of jump shots.
7. In my opinion, the last pass happens mostly between the 7-10m area, its location in the inside area is divided in equal ratios.
8. In my opinion, from the finish rate's point of view, saves, wide/over/post and quick fast breaks mean ways of gaining possession of the ball.
9. In my opinion, those fast breaks where the defending players, despite that the opponent's attack has not been finished yet, are already running up on the wings are more successful than the ones where defending players remain in their positions.
10. In my opinion, counter-attacks against disorganised defences usually happen when the attacking team has a numerical advantage.

Methods:

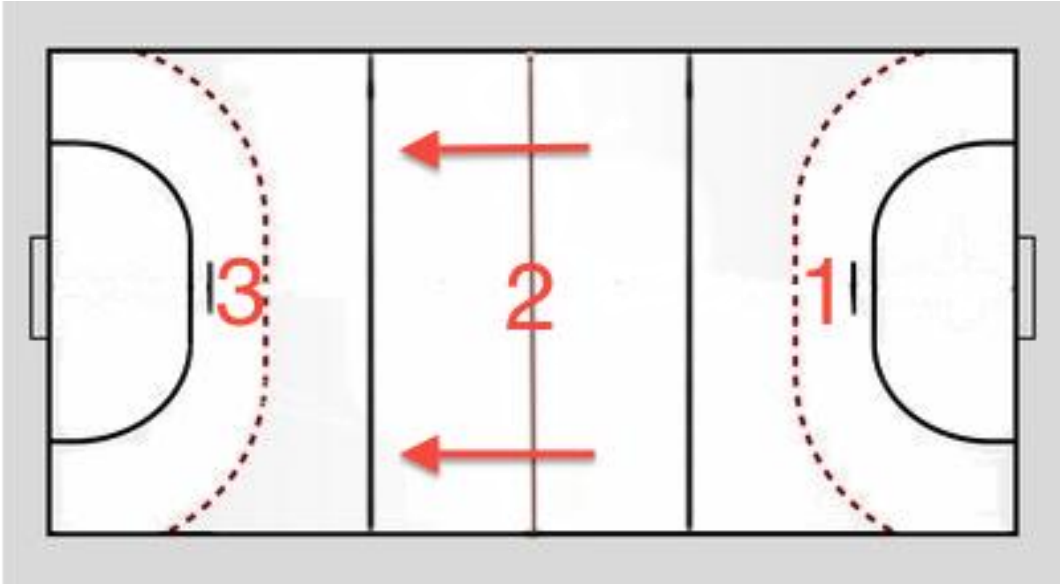
Demonstration of the sample test and method

I examined group matches of EHF Men's Champions League season 2012/13 on EHFTV.com. The fast breaks were chosen subjectively. The analysis was created indirectly via video recording. The monitored teams are the followings: Fuchse Berlin, MKB Veszprém KC, Celje Pivovarna Lasko, THW Kiel, Reale Ademar Leon, HSV Hamburg, Kadetten Schaffhausen, HC Croatia Osiguranje Zagreb, IK Savehof. The number of attacks is 132. My observations during the analysis of the games were put into tables.

Method of data-processing

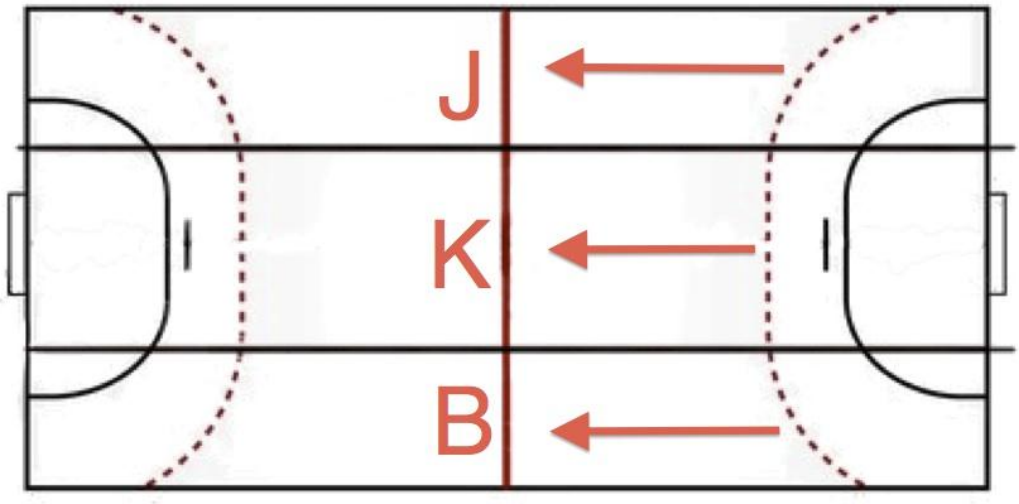
The information I gathered was based on the following aspects:

- Type of defence (closed zone, open zone)
- Gaining possession of the ball (wide-over, post, giving the ball away, block, technical fault, save, goal)
- In which third of the court did the attacking team reach a numerical advantage, or was there any advantage at all (Zone 1, 2, 3)

- a 

- 1. diagram- Zones of creating numerical advantage

- How is the ball brought up? (long pass, short passes, dribble, mixed)
- How did the players position themselves during the attack? (by positions or with two line players)
- In which lane was the ball brought up? (left/B/-middle/K/-right/J/)



2. diagram- Lanes of the pitch, where the ball is brought up

- The number of passes completed during the attack (0 if the player finishes alone dribbling with the snatched away ball)

- The sequence of the passes.
- The position of the last pass (LW,LB,CB,RB,RW), its distance from the goal in metres(7-10m, 11-15m, 16-20m, 21-30m)
- The description of the movement of the players.(parallel, cross movement, mixed)
- The number of bounces.
- The spot of the finish (LW,LB,CB,RB,RW,Pivot)
- The way of finish (dive shot, long shot, technical fault, giving the ball away, stopping)
- The result of the attack (I considered goals, clear goalscoring opportunities, 7metres as successful, and failed long shots, giving the ball away, technical faults, stops as unsuccessful ones)

Development:

Common determinations

The number of analysed games is 10. During the games, the teams scored a total of 281 goals, which is a 28.1 goal-average of a team per game. The number of attacks against disorganised defences is 132, out of which 95 goals were scored. This means, that 13.2 attacks per team were built up by fast breaks on average. Out of the 13.2 the number of goals scored is 9.5. This is a 72% efficiency. The number of direct fast breaks per team is 1.9, out of which 1.4 goals were scored. This is a 73.7% efficiency.

Results and Discussion:

Demonstration of the sample material in order of my hypotheses

1) First I examined whether the teams build up a fast break against a disorganised defence in today's games or not.(where players run parallel) 113 times the players were running parallel to each other. Mixed attacks were completed 19 times. We can see that there were much more fast breaks when the players ran parallel to one another.

How players were moving during a fast break (with ball)	Number of attacks	% rate
Parallel	113	86%
Parallel+cross-movements	19	14%

1.Table: The attacking players' type of movement

2) Looking at the lanes of the court where the ball could possibly be brought up, I have got the following results: The ball is brought up mainly in the middle part of the court.(60%) However, there way less balls brought up on the right side of the court than on the left.

Lanes/Parts of the court	Number of attacks	% rate
Left	34	26%
Middle	79	60%
Right	19	14%

2. Table: Lanes of the court where the ball is brought up

3) Looking at the way the ball is brought up, I have got the following results: Short passes(50%), dribbling(12%) or dribbling+short passes(23%) dominated. Dribbles occur in a 35% rate. The aim of a team is to quickly get the ball past the 2/3 of the court which is usually done by the Centre back player. The quick short passes increase the speed of the attack. The comparatively smaller number of direct long passes(1.9 per team per match) shows, that among the international elite, this can't be used so often. Organisation of the defence happens with great discipline. The average is 3.8 long passes per match.

How the ball is brought up against disorganized defenses	Number of attacks	Rate in %
Long passes	19	14%
Short passes	66	50%
Dribbles	17	13%
Dribbles + short passes	31	23%

3.Table: Bringing up the ball against disorganised defence

4) In my opinion, scoring goals from a fast throw-off has now become a basic tactic and gets an ever bigger role in teams' repertoire. Having the games examined, I have got the following conclusion: 36% of the times, building up the attack started from a goalkeeper save, this is followed by ball losses 24% of the times) and quick throw-offs (23% of the times). Technical faults (11%), over/wide/post (6%), and only one block from which a counter-attack could be built up.

Occupation of the ball	Number of attacks	% rate
Save	47	36%
Ball loses	32	24%
Goal - throw-off	30	23%
Technical faults	13	10%
Block	1	1%
Over/wide/post	8	6%

4.Table: Appearance of throw-offs after goals

5) In my opinion, the fast breaks, in which the number of passes are 1-3, have the most effective finish. I was looking for a coherence between the number of passes completed in an attack and the efficiency of the attack itself. From the attacking team's point of view,

I considered attacks successful when a player broke through the defence line or a clear goalscoring opportunity was created. This way, goals, goalkeeper saves, 7m throws, posts were noted as successful, whereas technical faults, ball losses, missed long shots were considered unsuccessful. The results show that 75% of the fast breaks are finished with one, two or three passes.(72%, 73% and 80% success rate in creating goalscoring opportunity) With the increasing number of passes, the number of samples to be analysed decreased.(4 passes-8%, 5 passes-4%, 6passes-2%).

Number of passes	All attacks	Rate in %	Goal	Unsuccessful	Successful finish in %
0	13	10%	6	5	46%
1	32	24%	23	9	72%
2	37	28%	27	10	73%
3	30	23%	24	6	80%
4	11	8%	9	2	82%
5	5	4%	3	2	60%
6	2	2%	1	1	50%
7	1	1%	1		100%
9	1	1%	1		100%

5.Table: Connection between number of passes and efficiency

6) Looking at the way of finishing fast breaks we can see, that the teams were aiming to create a clear goalscoring situation, these situations were finished with great efficiency. Out of the analysed fast breaks, 109 times (83%) the attacks were finished with shots on target, out of which 74 goals were scored and 8 penalties were created. Examining the finishes I have got the following result: dive shots were the most common(64%). 19% of the attacks were finished with long shots, while 18% of the times no shots were taken because of technical faults, stops, ball losses or free throws.

Way of finish	Number of attacks	Goals	7m	Saves	Post/wide	Way of finish in % rate
Dive shots	84	61	8	11	4	64%
Long shots	25	13	0	6	6	19%
Technical fouls	7	0	0	0	0	5%
Stops	2	0	0	0	0	2%
Ball loses	8	0	0	0	0	6%
Free throws	6	0	0	0	0	5%

6. Table: Way of finish

Dive shots and long shots were taken most of the time from the centre back position (30 shots on target, 87% efficiency). The ball usually goes from left to right, therefore there were more shots taken from the centre back(30), right back(14), right wing(14) positions than from the left ones.(LW,LB 11-11 shots) Attacks finished on the left were more successful(LW,LB 91-91%), than on the right(RW,RB 71-71%). From the pivot position, players scored with a 100% efficiency. From the centre back, an 87% efficiency could be booked. Dive shots were 83% successful.

Position	Number of shots	Goal/7m	Save/wide/post	Efficiency in %
LW	11	10	1	91%
LB	11	10	1	91%
CB	30	26	4	87%
RB	14	10	4	71%
RW	14	10	4	71%
Pivot	4	4	0	100%
All	**84**	**70**	**14**	**83%**

7.Table: Connection between the position and efficiency of dive shots

Long shots were taken from the left, centre and right back positions, 30% of which were dive shots. The most long shots were taken from the centre back position(14 times, whereas 6 times from left back, and 5 times from right back position). Finishes happened with jumps, apart from one exception. Long shots against disorganised defences were 52% successful.

Position	Number of shots	Goals	Not goals	% rate
LB	6	3	3	50%
CB	14	8	6	57%
RB	5	2	3	40%
All	**25**	**13**	**12**	**52%**

8.Table: Connection between place and efficiency of long shots

7) Looking at the last passes, the following results were noted: most passes were completed 7-10m away from the goal, 57passes (48%), 31 passes 11-15m away from the goal (26%), 12 passes 16-20m away from the goal (10%) and 18 long passes 20 m away from the goal (15%). The distribution is not equal among the 3 positions. We can see the path of the ball (from left to right) causing a preponderance on the RB position. The further away the shots were taken from the goal, the less efficiency we got. Passes longer than 20m (56%). Between 16-20m (83%), 11-15m (68%) and finally between 7-10m (77%) efficiency after the last pass.

Place and efficiency of the last pass	7-10m	Successful finish after the pass	Successful finish in %	11-15m	Successful finish after the pass	Successful finish in %
LW	6	4	67%	1	1	100%
LB	13	10	77%	6	2	33%
CB	15	13	87%	15	10	67%
RB	20	15	75%	8	7	88%
RW	3	2	67%	1	1	100%
All:	**57**	**44**	**77%**	**31**	**21**	**68%**

9.Table: Place, efficiency and distance from the goal of the last pass (7-10m), (11-15m)

Place and efficiency of the last pass	16-20m	Successful finish after the pass	Successful finish in %	21-30m	Successful finish after the pass	Successful finish in %
LW	0	0		1	0	0%
LB	2	2	100%	3	3	100%
CB	8	6	75%	10	5	50%
RB	2	2	100%	4	2	50%
RW	0	0		0	0	
All:	**12**	**10**	**83%**	**18**	**10**	**56%**

10.Table: Place, efficiency and distance from the goal of the last pass (16-20m), (21-30m)

8) Gaining possession of the ball from saves (36%), steals (24%) and fast breaks after quick throw-offs (23%) dominated. Less counter-attacks were built up from technical faults (11%), blocks (1%), wide/over and posts (8%). Most successful counter-attacks were completed from ball losses (78% goals scored). The number of blocks were too low to calculate any average. Shots not off target (75%), saves (64%) lead to successful counter-attacks. From quick throw-off (50%) and technical faults (36%), the teams could build up a fast break.

Way of gaining possession of the ball	Number of attacks	Rate in %	Goal scored	Goal not scored	% rate
Saves	47	36%	30	17	64%
Ball loses	32	24%	25	7	78%
Throw off	30	23%	15	15	50%
Technical faults	14	11%	5	9	36%
Blocks	1	1%	1	0	100%
High/wide/post	8	6%	6	2	75%

11.Table: The coherence between the way of gaining possession of the ball and efficiency

9) Having examined the situations of numerical advantages I realised, that in 70% of the times, teams were not able to create numerical advantage. In zone 1,2,3 the team managed to create a numerical advantage 7,5 and 17% of the times.

Area of creating numerical advantage	Number of attacks	% rate
0	93	70%
1	9	7%
2	7	5%
3	23	17%

13.Table: Area of creating numerical advantage

Conclusion:

By examining the fast breaks I ascertained that the international elite teams scored 2/3rd of their goals (33%/9.5 goals per match) against disorganised defence. The intention of building up fast breaks is a common tool of elite teams. Their tactical repertoire is executed by the most effective fast break concepts and players appropriate for them. The hypotheses is relevant, as the 86% of the attacks are completed by players staying in position. Combinations of parallel runs and cross movements between 9-14m in the opposite half are specific. Increasing the speed of bringing the ball up has come in to prominence, which is executed by specialists capable of fast dribbles. The substitution of 2-3 defenders and attackers has ceased. There's at least one defence specialist. At the start of an attack we can see how players are strictly holding their lanes. Those teams, whose attackers didn't fall behind, could play through the opponent's defender third very quickly. My hypotheses is not supported by analysing the lanes where the ball is brought up, as the middle and left section of the court were mostly used during an attack. The first passes usually go left (26%) or in the middle (60%), therefore very little attention is payed to the right side (14%). Looking at the possible reasons, I have come to a deduction, that because of the majority of right-handed players, the ball is mainly passed leftward.

The second part of the hypotheses happens to be true when examining how the ball is brought up. The number of fast breaks started by goalkeepers remain below 6 (3.8/match). The first part of the hypotheses is supported by the ever more important role of dribbles. Dribbling against disorganised defence appeared in a big rate (35%). The accelerated dribbles caused teams to come up with a different type of defending (e.g: CB defending in wing position, after a fast substitution players can return to their original positions). The purpose of that is to make sure that the player who usually brings up the ball can remain in the pitch. It's important, to have a great sense of making vital decisions, as the most important decisions are made pretty close to the opponent's goal (6-11m). Earlier the majority of specialists used to be wingers, although recently the players who have become specialists, have better physique, tactical talent and decision making ability. They have a better potential to meet the requirements of being an attack leading specialist.

I also find my hypothesis about a quickly performed throw-off after a goal true, because this tactic is taking an even bigger place in teams' tactics, confirmed by the statistics. The players apply this tactic consciously. The throw-off is usually done by the line player, passing to the L/R back or the centre back. The player, who gets the ball first, in most cases takes the ball with himself to get an advantage in speed, position or even a numerical advantage, and then passing to a teammate in a goal scoring position. It is very perceptible, that the attacking team tries to hold the pressure and right after the throw-off start an attacking formation right away, which is more beneficial towards an unorganized defense.

I terms of my hypothesis about the number of passes, it is true that the attacks finished after one or three passes are the optimum for the successful finishes. Teams finish 75% of the attacks after one, two or three passes with a success rate of 70-80%. These stats tell us, that the attacking teams tried to play through the pitch rapidly, in order to increase their chances of forming goal scoring positions.

My hypothesis about finishing attacks is true, dive shots are more effective (83%), than long shots (52%), and there are way more dive shots (77%) than jump shots (23%). Teams are aiming for dive shots. The efficiency rates were 91% for the left side and 87% for the middle zone. The right side was less efficient, 71%, but dive shots performed from the pivot position were perfect, 100%. Formations started from the middle zone, followed by cross movements are the reason why wing players receive many balls. The same amount of attempts was done by the wing players, like the back players. (Left side 11-11, Right side 14-14). At the cases of

numerical advantages, the moving wing players are trying to score from the strategically better inner side of the 6m line. This might be the explanation for the relatively high number (34) of shots from the middle zone.

Long shots mainly occur in the middle lane as the L/R backs dribble inwards(14 shots, 6-4 shots from LB/RB). The most common shots were taken from jumps. The efficiency is however lower than that of dive shots(52%). Though the long shots from the middle lane happened to be more effective(57%). By looking at the passes, we can say that the first part of the hypotheses is true. Passes right before goalscoring opportunities mostly emerged from the 7-12m zone(48%). The rate of the passes in the 11-15m area is 26%. 10% from 16-20m, and 20m or more(pass from own half) in 15%. I did not find coherence between the zone of the last pass and the efficiency of the finish. The second part of the hypotheses is however false. Passes are not divided in equal ratios. There are more passes from the middle or right section(right-34, middle-48,left-24) than from the left before the finish. This can be explained by the theory of the left-to-right movement of the ball, which I have already mentioned before.

My hypotheses regarding the possession of the ball is true. Fast breaks that are built when the opposing team loses the ball are the most successful ones (78%) involving saves (64%) and wide-high-post(75%). The ratio between the attacks shows that ball losses, saves and throw-offs provide the attacks' biggest part(83%).

My hypotheses concerning the numerical advantage is true. At most cases of the attacks, there were no numerical advantages (70%). Speed, tactic and creativity of players contributed to better finishes. Numerical advantages mainly occurred in the third zone of the opponent's half (23 occasions), contrary to the middle of the pitch (7 occasions) and the third zone in the own half (9 occasions).

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The professional, methodological and social background of the youth national teams' selection and education

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I. Abstract

Introduction - Working and gaining experience with the men's youth national teams, I was looking for the answers to these questions: 'How can we find players who can be good enough in the international championships?'
'What are the factors that influence effectiveness?' 'How can we integrate the experimental results of a handball youth centre?'
The comparison of the Hungarian youth national teams to the national teams of other countries helped me with writing this paper.

Methods - In my research, I was comparing four Hungarian men's youth national teams, one youth centre, and one international comparison in one age group. During the analysis, I formulated questions, and hypotheses. I evaluated the samples with one-sample t-test, and I was searching for the relation between my results and the effectiveness.

Results - During the analysis I realized that our selection system corresponds with the international trends. The quality of the work determines our international results.

Keywords - Talent, selection, preparation, success factor, public education, background of the club, statistic analysis.

1. Introduction

The Hungarian Handball Federation has a long term sport development strategy of handball, which defines the goals and tasks from 2009 to 2017. The introduction to the strategy analysis contains statistic samples which the development program was based on. This part reveals the fact that in Hungary there are more than 55 000 registered players today and the number of active players reaches 30 000. Hungary takes the 6th place according to international ranking. The Hungarian Handball Federation's long term sport development concept includes the strategic points which ensure the continuous success of the game. In this concept the education of the youth, as well as their training got a primary role.

2. Raising the problem

The most important aim of the selection is to find the suspected talents. The selection of the youth national team is considered to be effective if the success factor certifies the principles of the selection during the career of these players. We can examine the success factor via the performance on the youth international outfield, and the achievements in the adult competitions. Therefore, we assess the selection positive if our chosen players:

- As youth national team members, they are able to achieve an effective performance on the international outfield.
- They reach the qualified league.
- They become members of the adult national team.
- They have the sport factors which make them play efficiently in the long run.
- They influence the success of one of the qualified adult teams with their performance.
- They are capable to win crucial games in the adult outfield.

3. Literature review

3. 1. 1. Talent

Several researchers have dealt with the definition of talent. The investigation of talent developed from sport talent examinations and intelligence tests. The first person who set up a talent model was Renzulli (1978). Nevertheless, this model didn't contain significant elements about a sport talent.

During the researches they recognized an important fact: The surroundings a player lives in affects the presence of the talent.

The multi-factored talent model (illustration 1.) by Mönks and Knoers (1997) is a further development of the Renzulli's three-circle talent model. It shows three environmental factors: - family, school, partners. Beside the inner features they also have an important effect on the unfolding of talent. (Studies of the selection and the talent management, 2009, page 82)

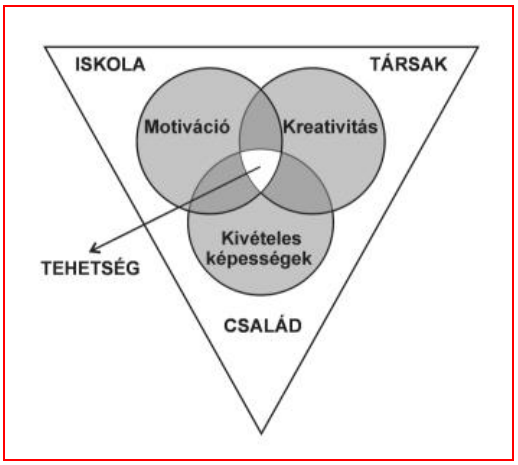


Illustration 1.: Mönks and Knoers's multi-factored talent model (1997)

- Iskola → school
- Család → family
- Társak → partners
- Motiváció → motivation
- Kreativitás → creativity
- Különleges képességek → special skills
- Tehetség → talent

Rókusfalvi (1986) has defined the talent in the following way: ’Talent is a specified structure of a set of functions of the whole personality, which results in a performance above the average and is based on the excellent skills. The progress depends on the effect of the environment, the social impact as well as personal activity.’ (Velenczei, 2012, p.28) Geneticists operating human biological researches try to find an explanation to the correlation between genetics and sport talent. Czeizel said in 2003: ’A person who proves to be outstanding at one of the three qualities (physical, spiritual, or personal) is called a talent.´

In Czeizel’s sport talent model (illustration 2), the factors shown may become the base of an excellent sport performance.

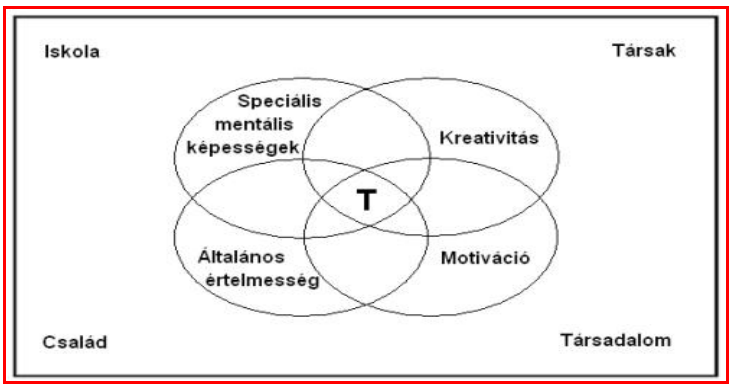


illustration 2.: Czeizel’s talent model

- Iskola → school
- Család → family
- Társak → partners
- Társadalom → society
- Motiváció → motivation
- Kreativitás → creativity
- Speciális mentális képességek → special mental skills
- Általános értelmesség → general intelligence
- Tehetség → talent

The inner circles are the interacting parts of the personality. In the rectangle you can see different parts of the society which have their common effect on the unfolding of the talent. (Hungarian Genius Portal: What is the talent?; Balogh László: Theoretical starting points for talent management program. National Talent Support Council, conference of 5-6th January 2007).

3. 1. 2. The appearance of talent in practice

According to the theories described above we can see that in all sports, including handball, talents are needed and searched for. Bognár and his colleagues tested the Hungarian specialists' definition of talent, based on the opinions of 33 representative team sport coaches. (Bognár and colleagues, 2009.) The interviewed handball coaches identified the talent by physical ability, technical knowledge, decision-making capability and co-operation.

The talented ahlete by Nádori:

- The organic and mental development is improving during practice work. The results are detected by proven tests.
- After the same practice work, they have better sport results.
- They learn the movements faster than other players. They use the learned techniques successfully, and execute the tactical instructions correctly.
- They apply the available knowledge and experience in creative ways.
- They are persistent to fight against difficulties and monotony.
- They are cooperative with the team mates and with the coach in order to reach better results. (Nádori, 2009)

3. 2. Selection

Similarly to other sports, in handball we try to find a player who is efficient in terms of the given sport. There is an old dilemma between the theorical specialists, and the sport professionals about who can be a successful player.

By the literature:

„The selection is meant to be a separation of players by qualities and traits. The separated players must be more suitable for pursuit of sports than the other athletes. The selection is a searching process, to find the talented player by verified tests, and with proven methods." (Measurement of sport skills, 1984, page 354)

Nádori said that our selection must be based on those criteria which are the outcome indicators of the adult championships. (Nádori, 2009)

Harsányi tought that we have to determine the sports specific performance profile, the selection criteria, the indicators of the success factors, the index of the selection, and the measurements between the training sections. (Studies about the selection and the talent menegement, 2009, page 30)

In 1979 Dr Frenkl Róbert professor has formulated that it is better to use the word 'preparation' instead of 'selection'. The selection is an important part of the preparation, they can't be separated, it cannot be an event. (Frenkl, 1979, page 74.)

The aim of the selection at the national team's level: The goal is to find the talented handball players, and to take them out of the crowd. During their preparation and the competitions the selected athletes must represent the strength of the country's handball both with their behaviour and their results in the international field.

4. Objective

In my dissertation I am examining the methods of selection and preparation of four men's youth national teams ('88-'89, '90-'91, '92-'93, '94-'95). The subject of the research is the possibility of forming a centre of youth preparation in Hungary.
I am testing the clubs' background, and the index of the success factors at the four national teams. I am comparing the anthropometric parameters with other countries' national teams in the age groups of '90-'91 and '92-'93. I would like to find the relation between excellent results and physical parameters. Furthermore, I am also analyzing the work of clubs in these two age groups, and the age compositions in the national teams.

I am examining the correlation between the selection and effectiveness indicators in the case of the '94-'95 national team and a youth preparation centre.

4. 1. Questions

- Is the selection and preparation system that we used in the last period capable to find the players who can be successful in the youth international field?
- Could the selection scheme be more effective with a test system which is based on measurements?
- Which section must be measured by the test system?
- Were the players who proved to be better than their team mates during the measuration better in the components of the game?
- Can the better result at international level be associated with the personal indicators?

4. 2. Hypothesis

- I assume that the selection can be more successful with objective excretion than the principle of „coache's eyes".
- I assume that with the selection based on measurements the successful player can be found more easily.

- I surmise that the measured selection is capable of compensating the advantages and disadvantages created by the club teams.
- In my hypothesis the selection can not narrow down just for the top teams' youth players.
- I do think that the squad can be more effective if the selected players go to youth preparation centres.

5. Subject and methods

5. 1. Introduction of the test sample

The samples of the test:

- 20 players of the ’88-’89 men’s youth national team
- 20 players of the ’90-’91 men’s youth national team
- 28 players of the ’92-’93 men’s youth national team
- 33 players of the ’94-’95 men’s youth national team

I could perform the international comparison in the case of the ’90-’91 national team, based upon the work of the EHF lecturer Martin Túma (CZE), analysing the European Championship in 2008, which is a comprehensive assessment about the 16 participating teams. I could also compare the 19 participating teams of the World Championship of the ’92-’93 age group with the Hungarian national team’s indicator.

5. 2. Presentation of the test method

In order to answer my questions I applied the statistic data analysis accepted by the physical education- and sport research. The pieces of information are my recorded data collected during my work with the national youth teams, as well as the processing of international youth championships’ analysis. The data of the international youth championships were presented by the International Association after the competitions, and I compared those numbers with those of the Hungarian national teams in the same age groups.

I processed the results of the tests which I set in the case of the selection during my work with the ’94-’95 national team. We applied the following tests:

- Survey of the fast run on 20 meters in pairs. They started behind an assigned line with standing start. They reached the finish line with maximal run. Every player had two attempts, and the better result of the two was evaluated. The measurements were made by manual stopwatch, with decimal precision.

- How far can they throw the handball without gaining momentum from throwing straddle? They must throw the ball behind the base line. The foot, which is opposite the throwing hand touches the line. After, they took the throwing straddle, they threw the ball with the throwing hand. Every player had 3 attempts. We measured the distance with centimeter accuracy.
- Sideway jump from the left foot to the right.
- Sideway jump from the right foot to the left. They executed the exercises individually. We measured every attempt. They had 3 tries to either side and the best result of the three was evaluated. We measured the distance with centimeter accuracy.

5. 3. Method of the data processing

During the data processing, I was looking for the answer, if there are measurable, detectable differences between the selected players' results, and of those who were left out of the national team. To find the answer I used one-sample t-test. I have represented the results on graphs. I evaluated the data by quantitative and qualitative aspects.

6. The selection of the Hungarian youth national teams

The national teams of the countries represent every time the quality of the performed work.

By the established practice, the selection can happen in three ways:

- The direct way: The national team's coach personally verify the ability of the players who can be selected by physical tests objectively.
- The indirect way: It can happen by the club coaches proposition.
- The two mentioned ways together: The proposition, the physical tests and the subjective observation work together. (Match visiting, practice visiting)

6. 1. The club team background of the youth national team members

I was examining the national team members' club team background. In illustration 3 I am going to present the '88-'89 national team's 20 players' club background, paying special attention to the classification of the clubs the players had come from.

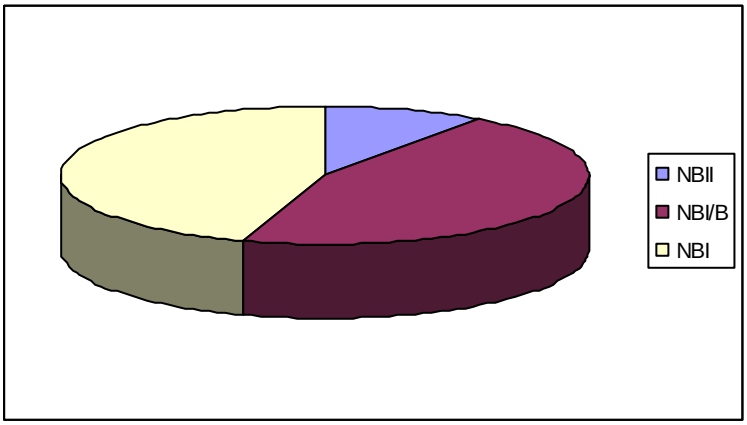


Illustration 3. : The club background of the '88-'89 national team members.

As the illustration shows, out of the 20 players, who were preparing for the European Championship, there were just 2 players who had been elected from the third league, nine players from the second league, while from the first league there were also nine players.

During the preparation time, seven players decided to move from their lower qualified team to a team of the first league as a career continuation. The seven players, who had changed their team were members of the national team, which participated in the European Championship.

The selection of the ’90-’91 national team had already happened before, when they were younger, by other coaches. The preparation started with these players. All of the 20 players of the national team were playing in the youth team of the respective first leagues’ team.

After the selection of the ’92-’93 national team, we started the preparation with 28 players. The classification of the players’ teams were the following:

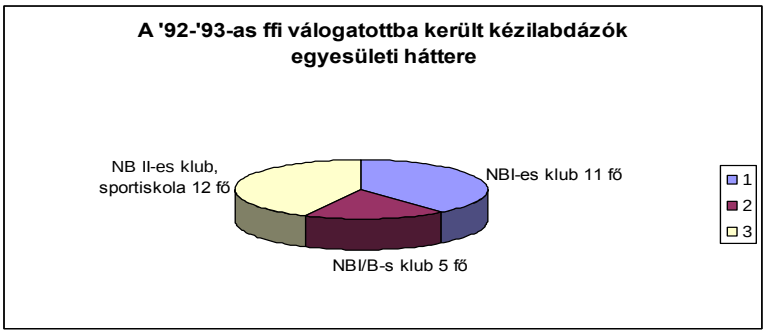


Illustration 4.: The club team background of the ’92-’93 national team’s players

During the selection, we were trying to find the talented players in the smaller teams as well. In the time of the national team’s preparation out of the players, who were playing in a lower classified team, 12 moved to team, that played in the first league,. There were 8 players of this 12, who played in the European Championship.

6. 2. The method of the Hungarian men’s youth national teams’ selection

The Hungarian Handball Association’s presidency decided about the teams’ coaches every two years in the autumn period after the committee’s proposal.

After the coaches’ nomination they started the work necessary for the preparation for the following international championship.

The Hungarian Handball Association defined the indicators which form the base of the selection.

The selection was based on:

- physical endowments
- technical knowledge
- appropriate mental qualities
- love of handball

The granted aspects were mostly based on the coaches opinion and subjective impressions. It didn't contain objective, measurable data therefore the following methods had to be applied:

- By the club coaches propositions, the proposed players were invited to a one-day selection camp from all over the country.
- In the one-day selection camps, we made teams of the players, and made them play. During the matches they could prove their technical and tactical knowledge.
- In the first section the coaches didn't give any instructions to the players. We wanted to test their creativity, their problem-solving skills, their independent decision-making ability. In the second section they also needed to solve some given tasks.
- By their presented play we created a wide frame-team, which stayed open all along.
- During the preparation section just before the competitions we did not change the narrow frame-team, provided there was not the case of an injury.
- The other coaches of the other youth national teams, and the manager of the Heraklesz program helped the nominated coaches' work with their observations and opinions.

6. 3. The method of the Hungarian men's youth national teams' preparation

After the selection of the national team of the 15-16 year-old players we started the work with a bigger frame-team. We had the possibility to hold one-day camps monthly, every six weeks, where we tested the knowledge of the players. We needed to reduce the number of the group

continuously day by day. At the same time, we gave opportunity to the player left out to prove their development at another time.

By the time they reached the 17-18 year-old age group, in the big frame-team there were just 28 players. During the preparation games we continued to leave out players, until we found the 16 players who we expected to be successful in the international field after a longer preparation.

6. 4. After we selected the actual team, we performed the following preparation:

- There were two-day camps every month, which were organized at different places all around the country.
- There were some friendly double games against other nations during the preparation section.
- The 15-16 year-old players gained experience in the international field as participants of the ORV competition. (’92-’93, ’94-’95 national team)
- Before the qualifying competition, there was a 3-5-day preparation camp as well as after the qualifying competition.
- If they succeeded, before the international competition, we organized two-day camps monthly, and just before the competition, there was a three-week preparation.
- During this long preparation, there were possibilities to play more friendly preparation games.
- During the national team’s practices, the players were given individual practice plans, which they had to perform in their own club team.
- The players’ physical, and tactical development took place during the club practices.

6. 5. Results

Age group	*ORV*	*EC qualification*	*EC*	*WC*
'88-'89	There wasn't	Succeeded in Serbia	Tallin 10. hely 2006	There wasn't
'90-'91	There wasn't	Succeeded in Italy	Brno 12th place 2008	There wasn't
'92-'93	Modra 3rd place 2009	Failed in Debrecen 2009.	Not participated	Failed qualification
'94-'95	Hungary 1st place 2010.	Failed in Bulgaria 2011.	Not participated	

1. table. International results of the youth national teams.

As the table shows, the last team, who qualified for the European Championship was the '90-'91 national team. As I was reading the analysis of the European Championship organized in Brno in 2008, I started to deal with making a comparison between the Hungarian national team, and other national teams, who participated on the international competitions. I wanted to make this comparison, because I was convinced it could help us to make the selection more successful. I made this work at the first time in the '90-'91 national team.

7. The international comparison

In the European Championship in 2008 in Brno, the Hungarian team came in 12th. This result was a disappointment, because my colleagues and I thought that our selection would correspond with the international trends. This 'failure' urged us to make further analysis.

In the first section of my analysis I examined the year of the birth of the players. According to the 2nd table I can declare that the Hungarian team's players do not deviate from other national teams' players average year of birth. In fact, I can lay it down that contrary to other teams, in our team there were fewer players born in 1991, and none of them belonged to the younger age group. Therefore, this fact couldn't influence our efficiency.

ranking	***country***	***Number of players***	***Born in '90***	***Born in '91***	***Born in '92***
1	GER	16	12	4	
2.	DEN	16	11	5	
3.	SWE	16	16	0	
4.	ISL	15	15	1	
5.	CRO	16	12	4	
6.	ESP	16	10	6	
7.	FRA	16	9	7	
8.	NOR	16	11	3	
9.	SLO	16	12	4	
10.	SRB	16	11	4	1
11.	BIH	16	10	6	
12.	HUN	16	14	2	
13.	CZE	16	8	6	1
14.	RUS	16	16	0	
15.	SVK	16	11	5	
16.	FIN	16	11	3	2

Table 2: The age groups of the teams of the European Championship in 2008, in order of ranking.

As we can see on the 2nd table, in the 16 teams participating in the European Championship older players played definitely more. The Swedish, and the Russian teams built there group just on the older players, while three teams already put players of the youngest age group in their team. Of course there are pros for the older team, for the mixed team, and for making the

younger players play in an older age group team, but at the same time there are cons as well. A detailed analysis concerning the age groups could also show an interesting result. I made a comparison between our national team and the other national teams by the number of clubs giving the players.

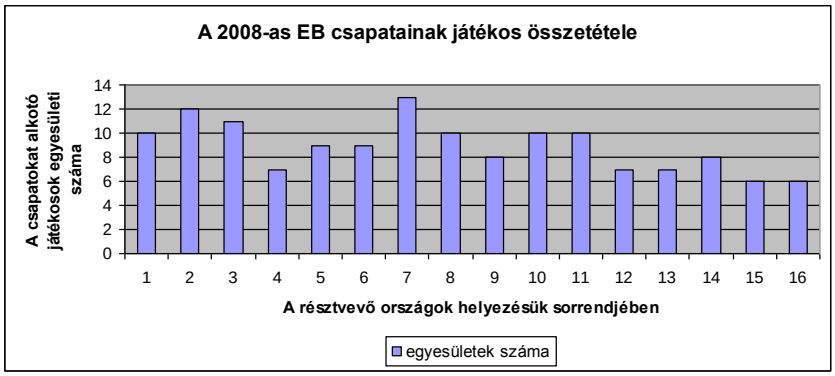


Illustration 5: The background of clubs participating in the European Championship in 2008 (analysis by Martin Túma)

Illustration 5 shows that teams which were more successful than the Hungarian one had a wider club background, with better quality of young players. (The countries which belong to the ranking can be found in table 2). It can be an interesting fact that, Denmark's national team which finished in the 2nd place, got players from 12 club teams. It is surprising that although Denmark is just half of Hungary in the aspects of territory and the population, the Hungarian national team got players just from 7 club teams only.

I made a comparison of the anthropometric characteristics, which has shown the following results after the examination of height and weight:

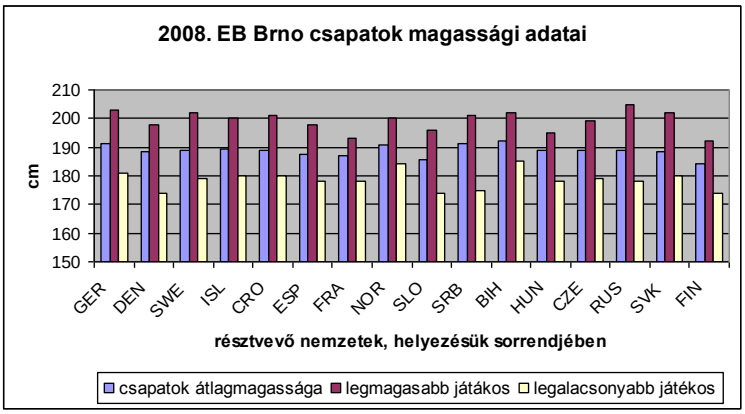


Illustration 6: Heights of the European Championship's participants, in 2008.

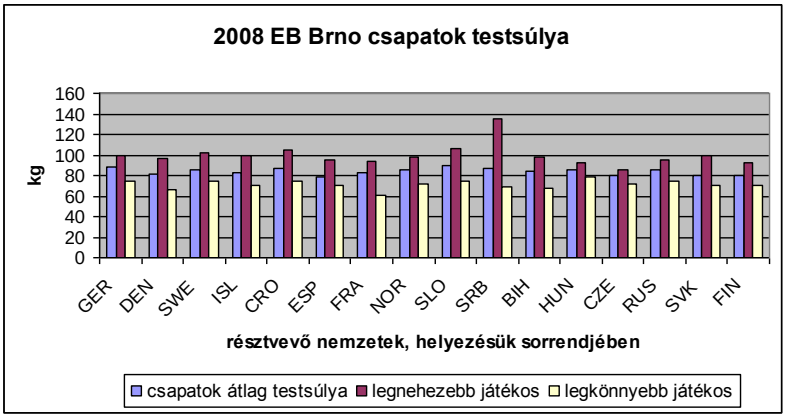


Illustration 7: Weights of the European Championship's participants, in 2008.

According to illustration 6 and 7 I can determine that we don't need to search the reason of our inefficiency in the athropometric indicators of the team. We can see, it corresponds with the international trends.

Comparison of the '92-'93 national team

I made the international comparison of the '92-'93 national team by the participants of the World Championship, in 2010.

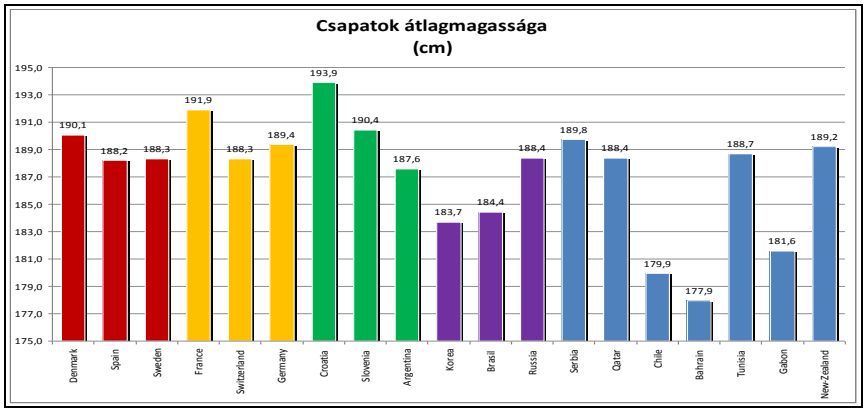


Illustration 8/a: Heights of the World Championship's participants.

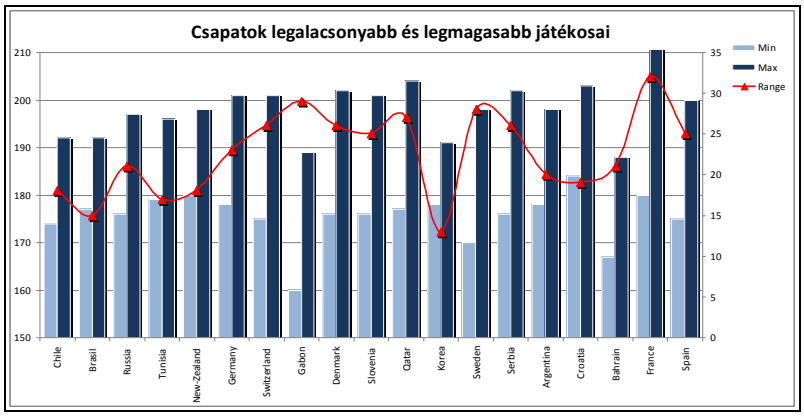


Illustration 8/b: Weight of the World Championship's participants.

Examining the results of the '92-'93 World Championship we can see: The teams which finished on the top of the ranking, don't have the best anthropometric index. Probably, in this age group, technical, tactical knowledge, or dexterity does not accompany the high anthropometric index, they can show up later, in the adult age group. This changing can regroup the international field's rankings.

By testing the anthropometric index of the Hungarian national team, we can see that it corresponds with the international trends.

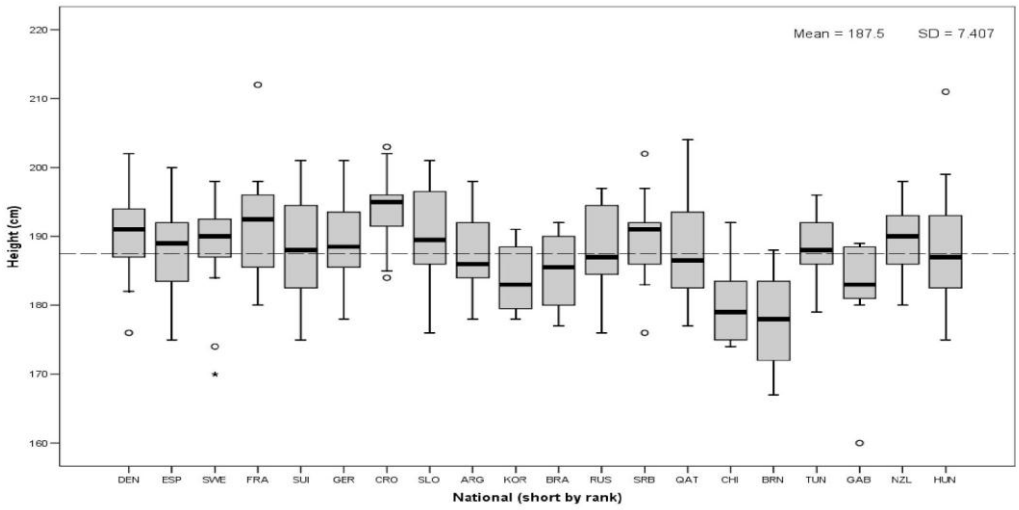


Illustration 8/c: The Hungarian national team's place in the international ranking.

By the analysis, we can see, the anthropometric index didn't influence the result of the Hungarian team. The absence of the physical, technical, tactical training significantly influenced the result. Every youth national team is preparing under performance pressure for the international competitions. The Hungarian competition system does not favour the national team's preparation. We have to stand on the international competitions with players overloaded by competitions. On several occasions the players arrived at the camps injured, semi-injured, and after the camp, they had to continue participation in the competition of their respective club teams.

The selection of the three presented national youth team happened according to the coaches' subjective impression. During the selection, it was an important thing that the anthropometric index of the players had to correspond with the international standard. However, other important, objectively measurable indicators influencing success, played a minor role in terms of our selection.

Summarizing the presented analysis, we can determine that the height, and the weight of the players play an important part in the selection, but in the aspect of the result it has varying importance.

8. The selection of the ’94-’95 national team

As a head coach I performed the selection of this age group with my coach colleagues on the basis of former selection experiences, as well as the experiences of the youth center’s selection, led by me.

1. First step: The regional managers, and the coaches selected the suspected talented players, and executed a physical tests. We had defined the measured physical capability in order to make it measurable and easy to evaluate under the same conditions in every region.
2. Second step: We established two centres within the country. There was one in Debrecen for the eastern, and the middle region; and another in Veszprém for the western, and the middle region. In these two centres we continued testing the selected and the proposed players. It was the time when players, who couldn’t participate in the region-selection, were rejected, or played in smaller club teams could appear.
3. When we defined the physical test, we endeavoured:

    - To make tests of the skills which are the basic elements of the game.
    - To make sure that every player knows the given exercises.

    That is why we chose these skills:

    - 20 meters running,
    - Handball throwing without gaining momentum,
    - Jumping from one leg to the other sideway (we tested this skill to measure the leg strength, which is important for the skill of the faking)

    The exercises were easy, feasible, measurable, and could be evaluated rapidly. After the physical measurement, we tested the level of the technical, tactical knowledge.

    In order to compare the results of the selected players I prepared a graph.

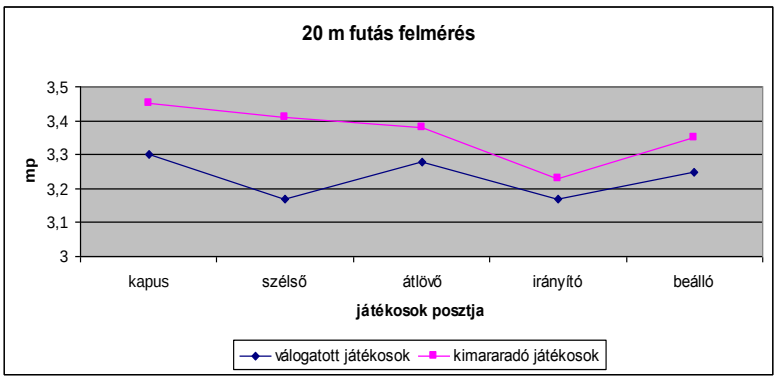


Illustration 9/a: Results of the 20 meters running test.

As the graph shows, the selected players on every post reached better results, than the players left out. The goalkeepers' relatively good achievement was surprising, although by their anthropomertic index, they were tall, thin, fast types. The selected players' results were well-balanced, because their performances were between 3,17, and 3.30 seconds.

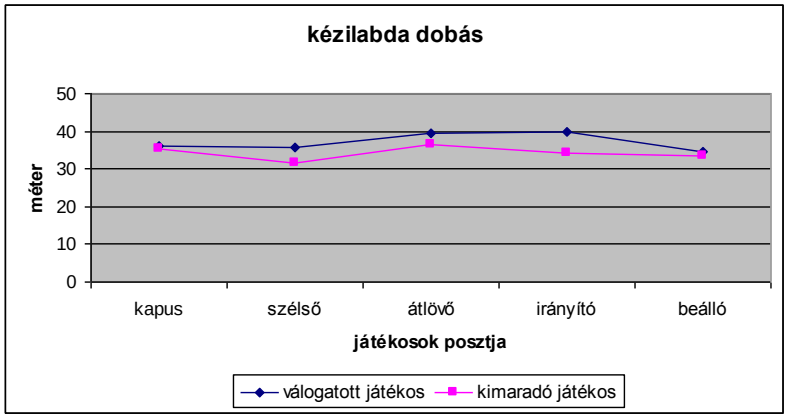


Illustration 9/b: The tests of handball throwing without gaining momentum.

We measured the throwing power with this test. I can clearly declare, the selected players had bigger throwing power.

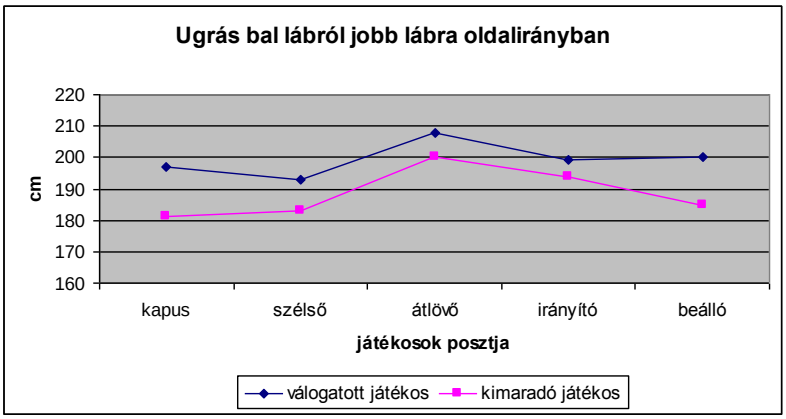


Illustration 9/c: Jump-test, from left foot to the right sideway.

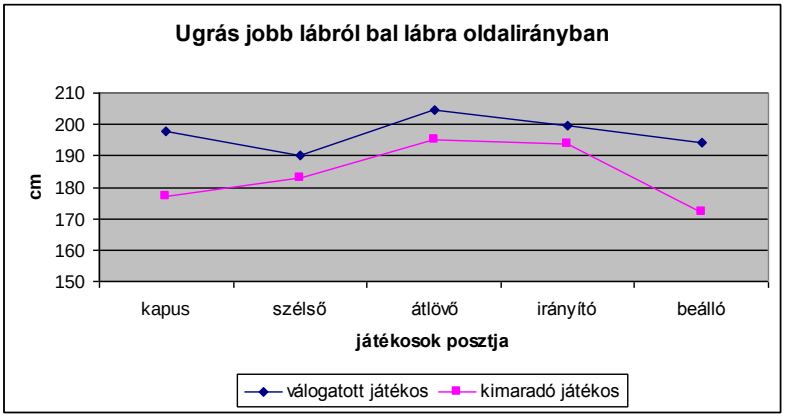


Illustration 9/d: Jump-test, from the right foot to the left sideway.

I presented the leg strength on Illustration 9/c. The different types of fakes are the basic elements of the game. That is why the legs must be strong enough to reach speed advantage by the first step, thereby they can get the space necessary for their movements.

The presented results of the tests justify that the selected players had better results than those who were left out. Due to lack of time, we couldn't measure other characteristics, skills, and capabilities.

8. 1. The experiences of the selection

I got the chance from the Presidency to make the selection of the ’94-’95 national team according to my principles.

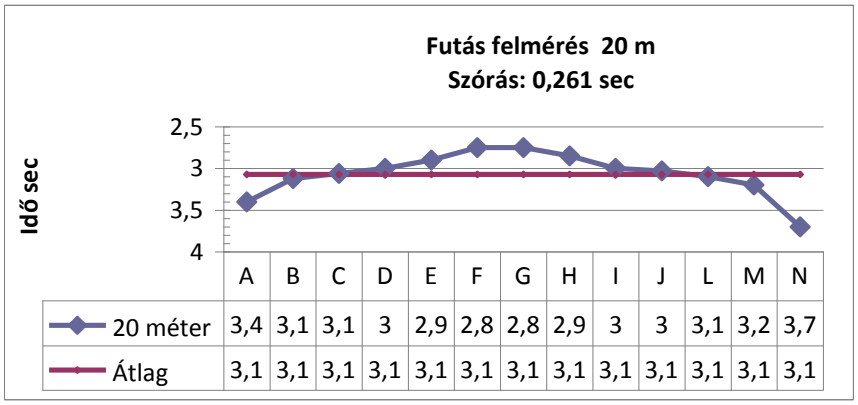
- We should organize the selection camps as widely as possible, and we have to announce the date and the location before the camps.
- We have to give the opportunity for the players, who were not proposed by their coaches to the selection camp.
- We should pay attention to the players who are not really good technically, but who have a good physical index. We could make them better quickly with individual practice plans, or even individual practices.
- The task of the national team’s coach is also to monitor the lower championships, like the regional championships, the student Olympics as well as the third league championships.

8. 2. The experiences of the preparation

The major competition of this age group was the Competition of Olympic Talents organized in Balatonboglár in 2010.

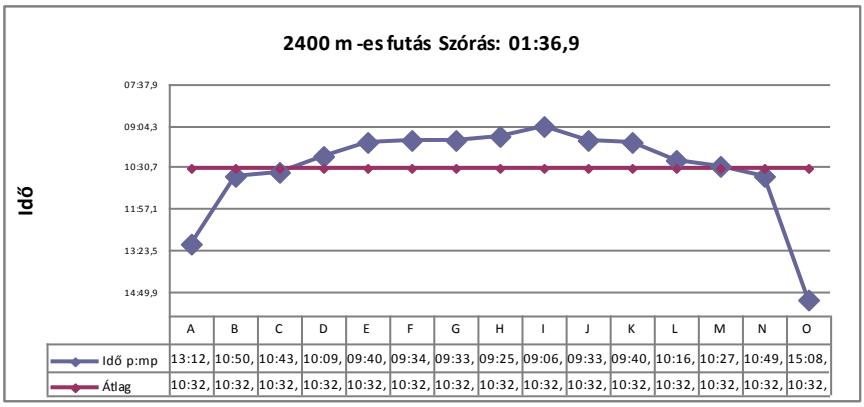
- The Handball Association ensured two days per month for preparation camp from Januray 2010.
- We had just four international preparation games – Limited experience.
- We tried to test our players in every camp, in terms of physical index, technical - and tactical knowledge.
- We had created the tests in order to make them easily measurable in the clubs. The tests were the following:
    1. 20 meter running, in pairs, with standing start. The measurements are made by manual stopwatch, with decimal precision. Every player had two attempts, and the better result of the two was evaluated.
    2. 2400 m running, they started in two groups. The location of the measurement was the athletic track of the camp in Tata.
    3. Push ups, the marking attached on the chest needed to touch the floor. They sought maximal performance. They had one chance.

4. Squat, in the gym, in front of the wall bars, at one meter distance. During 30 seconds, they performed squats with maximal speed, their heels needed to stay on the floor.
5. Handball throwing, in contrast with the camps tests, this time they performed the throw from supine position. With this exercise we wanted to switch off the movements of the legs and the trunk,this way we wanted to measure the strength of their shoulders. They had three chances to throw.
6. Pull-ups, we tested this exercise in a handball gym, on a pull-up stand. We counted just those implementations, when the line of the chin got higher than the pull-up stand's horizontal handrail. They had one attempt.
7. Long jump without gaining momentum, and five strides. The players performed them in the handball gym. They had three attempts, and we recorded the best results. They performed this exercises behind an assigned line, from two feet. The landing place was a tatami. We measured the attempts with measuring tape, with centimeter precision.
8. At the occasion of each tests, we tried to determine the exercises from which we could infer to the game elements' implementation level. The test's elaboration requires more work with. Probably, we should have changed some exercises, or we should have continued measuring the sideway jump from one foot to the other one, what we started to measure in the selection camp.
9. I present the graphs, that I made as a result of the tests. In the previous chapters, I already mentioned that, there was a lot of times, when the players arrived to the preparation camps with injuries. This fact turned out at the tests' evaluation. There was not part of the test, when all the invited 17 players were all active.
10. I averaged the results of the survey, and I indicated the average deviations also. The letters under the results do represent the players.
11. 20th September 2010 was the date of the surveys in the camp of Tata. This was the last time, when I met the team as their coach.



	A	B	C	D	E	F	G	H	I	J	L	M	N
20 méter	3,4	3,1	3,1	3	2,9	2,8	2,8	2,9	3	3	3,1	3,2	3,7
Átlag	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1	3,1

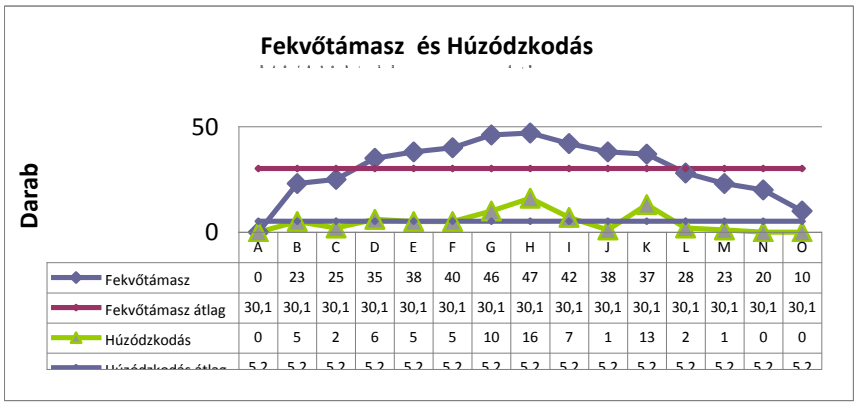
10./a illustration: Survey of the '94-'95 national team (20/09/10, Tata)



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Idő p:mp	13:12,	10:50,	10:43,	10:09,	09:40,	09:34,	09:33,	09:25,	09:06,	09:33,	09:40,	10:16,	10:27,	10:49,	15:08,
Átlag	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,	10:32,

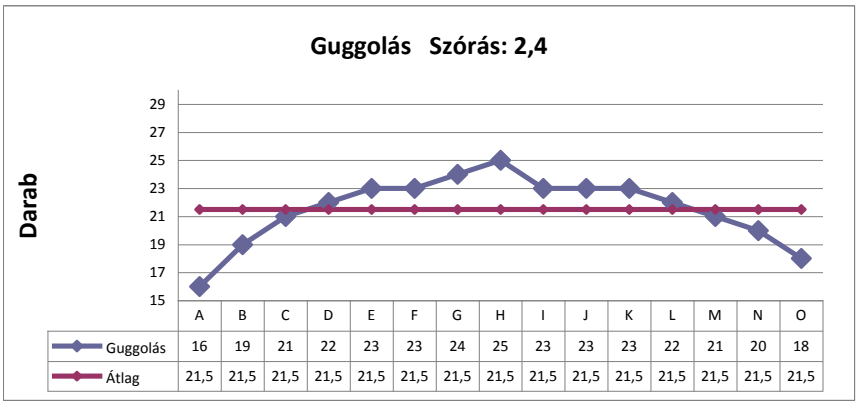
10./ b illustration: Survey of the '94-'95 national team (20/09/10, Tata

After the two running exercises we saw that the goalkeepers results are much more worse, than the other players' results. Some of the players were injured and this influenced their results.



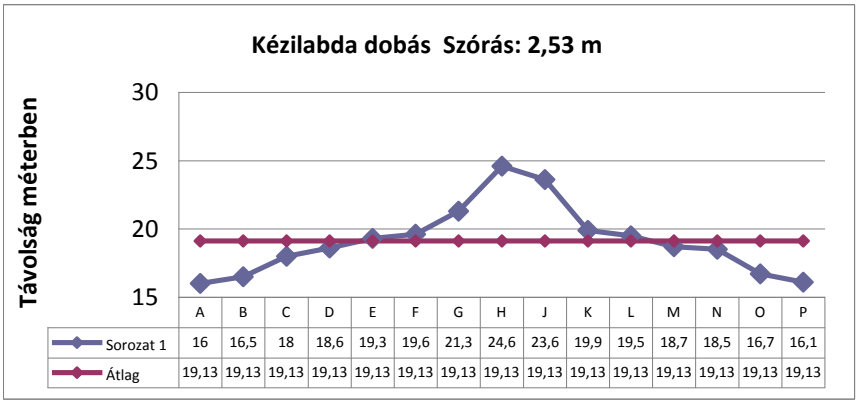
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Fekvőtámasz	0	23	25	35	38	40	46	47	42	38	37	28	23	20	10
Fekvőtámasz átlag	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1	30,1
Húzódzkodás	0	5	2	6	5	5	10	16	7	1	13	2	1	0	0
	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2	5,2

10./ c illustration: Survey of the '94-'95 national team (2010/09/10, Tata)



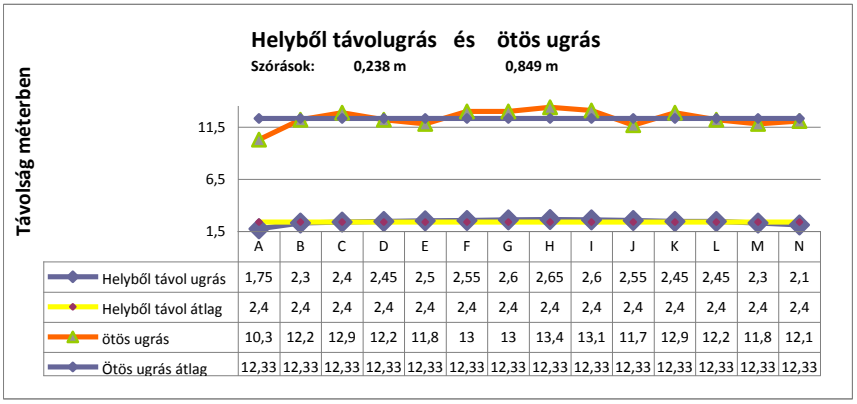
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Guggolás	16	19	21	22	23	23	24	25	23	23	23	22	21	20	18
Átlag	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5	21,5

10./d illustration: Survey of the '94-'95 national team. (2010/09/10 Tata)



	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
Sorozat 1	16	16,5	18	18,6	19,3	19,6	21,3	24,6	23,6	19,9	19,5	18,7	18,5	16,7	16,1
Átlag	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13	19,13

10./ e illustration: Survey of the '94-'95 national team (2010/09/10 Tata)



	A	B	C	D	E	F	G	H	I	J	K	L	M	N
Helyből távol ugrás	1,75	2,3	2,4	2,45	2,5	2,55	2,6	2,65	2,6	2,55	2,45	2,45	2,3	2,1
Helyből távol átlag	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
ötös ugrás	10,3	12,2	12,9	12,2	11,8	13	13	13,4	13,1	11,7	12,9	12,2	11,8	12,1
Ötös ugrás átlag	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33	12,33

10./f illustration: Survey of the '94-'95 national team.(2010. 09.10. Tata)

By the tests' results we would have prepared the individual practice plans to each players, which they would have done on their own club team practice.

The team was open, so everybody who corresponded to our expectations had a chance to join in with our work.
We called back the left out players for several times, so they could prove their progression.
After the selection, the players' anthropometrical measurements have been done.

We won on the Olympic Hopes Competition, as a first annual national team. This success was very important in therms of the Hungarian youth national teams. If we make a comparison with the other age group national team, we can see this age group's team has a prominent good capability and talent, and the players are strategically determinative members of the youth age group.

9. Results and experiences of a youth center operation

Before I analyse the players' success factors, I would like to present the very background of the public education, which could ensure the career of the players.

From September of 2004 to 2010 i worked as a sport professional director in the Csanádi School, Sports School and Pedagogical Institute. The school was operated by the Wesselényi Miklós Sports Public Foundation, and its function was the education of the athletes, and to help their sporting activities. I evolved the principles of the enrollment, by which they could do a successful matriculation.

9. 1. The aim of the youth center which set up in the public education

We reached successful national and international results, by create an elite education, by ensure its conditions, by build a conscious youth training system.

Between 2004 and 2010 the Hungarian Public Education Act prescribed the compulsory school attendance until 18 years of age. The education of the athletes must rely on the general school system, but it must be performed on a different way. A creation of handball youth center was the solution. For those players, who got older than 16 years, we had to find a solution for the continuation of their career. A cooperation agreement has been reached with the PLER KC's team from the first league. This team needed to ensure the practice-, and game option for those players who attended our school. The players had their afternoon practices with this team, and they got the opportunity to play in the PLER KC's team. The practices of the morning period was still held by the youth center, under consultations with the club team coaches.

The „Youth Center" name means, the athletes, who attended, could reach much more higher level in their own sport, than just with a general practices, and educations.

The goal:

- Versatile skilled players' education at a high level.
- The players' preparation to the international competitions.

- Effective teaching of the knowledges which are prescribed by the public education, and this education made them capable to continue their studies at universities, or colleges.

9. 2. Selection in the youth center

Conscious, and scientific selection at 14 years of age. This age in the studies is an important point, because they start to attend to the secondary school, they have to change their school. This is that period when they are old enough to leave their family and start to build their conscious sport life with sense of responsibility.

Elements of the selection:

1. Anthropometric measurements.
2. Health suitability. Test of the internal medicine, orthopedics, physiology, and treadmill test.
3. Psychological test. Loadability, tolerance of monotony, level of success-orientation, ability of winning knowledge, test of the social relationships.
4. Test of the cognitive abilities, inductive test.
5. Test of the physical capabilities.
6. Test of the playing skills.
7. Test of the emotional skills.
8. Entrance of the secondary school.

At the selection, we had to pay attention, to select just enough players in every age group. This was important because of the playing time that they spent on the court. They needed to play enough games for to evolve in their personality and in their sport also. A part of the selection was the entrance to the secondary school, because these players were the parts of the public education. That is why they participated on the central writing entrance test, and on the oral interview.

9. 3. Material, and personal conditions:

9. 3. 1.Material conditions

- A handball gym, which is complying with the rules, and appropriate for teaching handball, and for organizing handball games.

- A fitness room, a swimming pool, an athletic track.
- Health center, which is accredited to doing sport medical examinations, and a rehabilitation unit.
- A school, where they study, a dormitory, a dining area.
- A space for watching videos.

9. 3. 2. Personal conditions:

- One high qualified coach for every age group.
- Educators of the dormitory.
- A sport doctor, a sport psychologist, a masseur.
- Teachers of the secondary school, who can adopt the sport trainings.

10 . Difficulties and experiences of the sport education

I used my experiences that I had obtained as a coach and as a teacher in order to establish this sport education. I tried to make a kind of education model in which every participant gets everything to become a successful handball player.

For this purpose we tried to find the technical solutions which the players use in stake situations. We were searching for some other solutions which can be more efficient in the given situations. We intended to implement new, less-known movements, practising them until they became skills and develop the players to be able to use them during the game.

Every player had two years to enrich their technical, tactical knowledge and physical skills. Beside that they needed to learn the „fighting" techniques by which they could become players who can give proper response both mentally and physically.

After these 2 years we offered them an another opportunity. The players who felt unable to comply with the challenges of the professional sport continued to attend school, and they got facilitation in the sport preparation. The players who undertook the challenges of the professional sport continued professional preparation. We had a dual goal: they needed to practise in order to get to a higher level and win the games at the same time. They had to be able to develop and control their practice work and their personality in order to win in continuous stress situation.

I feel my work was successful, because during this time I had 17 players, who were given the chance to become a national team member. Of my experiences, I think, the most important was that we had to test the players' development constantly.

I expanded my previous experiences with the ones that I obtained at the youth sports center, and I used them at the selection of the '94-'95 national team.

I evaluate the selection of this age group as successful.

11. Success factor

„Neither the strongest one stay alive, nor the smartest one, but who is the most receptive to the changes." (Charles Darwin)

At the beginning of my study I mentioned that with the success factor we could justify how a talent is found.

Success factors can be:

- How many handball players can play in the adult national team?
- How many players can play in the first league?

Evidently I checked how many players reached these criteria. I created more groups of those players who had practised with me too. I didn't take the '94-'95 age group into consideration because of their young age although there are already nine players who can prove their talent in the first league.

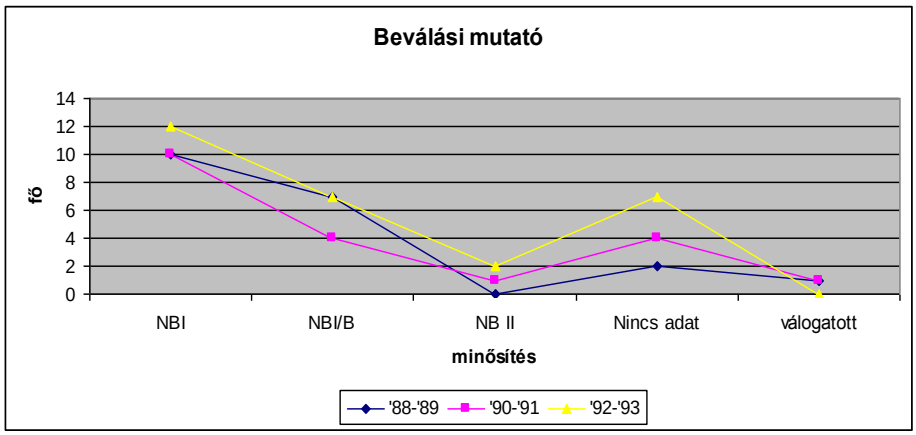


Illustration 11. : Succes factor

We can see that from the three age groups with 68 members altogether 32 players are playing in the first league today. Two of them were invited to the adult national team, and one of these two participated in the Olympic Games.

It is worth checking out the school background of the players who have outstanding sport career. It is necessary to examine this fact because our players are members of public education. Their career can be successful provided the public education tries to help them during their studies.

	Csanádi Budapest	***Ipari Veszprém***	***Széchenyi Szeged***	***Rosti Dunaújváros***	***Egyéb***
National team members	17	9	9	8	25
First league team's player	11	1	4	8	14

Table 3: The success factor of the youth national team members

In Hungary there are 4 public education institutions where a priority level handball education can be achieved. The presence of a first league team was an important condition. In the table we can see that players who started their career in a smaller team with lower budget and who were youth national team members prevailed easier in the first league. The youth players of the two teams which participated in the international field with exceptional results got less chance to play.

The function of the public education institutions is huge. These students usually need special treatment and there are just a few schools that will accept them. We find the description of professional student athletes in a study by Lénárt Ágota: 'On the cognitive level they have high level of intelligence and this can cause problems because of they can show obstinacy, lust for power, and stubbornness as personality traits. Fast learning ability and high level of intelligence caused by hyperactivity could cause problems both in academic and in psychosocial sense. After a period of time this process causes the fact that their studies are often pushed into the background either periodically or completely." (Studies about the selection and the talent management, 2009. page 204.)

From this short part of the study, we can see that the education and teaching of the players imposes additional burdens for the schools and for the teachers as well.
From the 68 players who were national team members in the 3 age groups, only 32 managed to get into the first league, which means 35 percent success factor.

Among the reasons of this drop-out I have to mention some injuries, their studies at universities or colleges, or personal problems. Furthermore, we must not forget about the teams which don't take a lot of young players, because they don't want to take the risk.

12 . Summary

At the beginning of my thesis, in chapter 4, I posed 5 questions, which have been responded in my dissertation.

Is the selection and preparation system we are using nowadays capable to find the players who can represent our country successfully in the international field of YAC?

I couldn't find a clear answer to this question. The recently used selection system based mostly on subjective opinion found extremely talented players in also the Hungarian field. We can appreciate the successfully performed qualification competitions. After the equalization of the knowledge in the international outfield if a team is qualified to the 8 countries participating in international competitions, we can consider it to be an excellent result. At an international level, with this selection and preparation system we didn't find any players who could have become a determinative player in his age group.

Could the selection system be more effective if it was based on a test-system?

My answer to this question is a definite yes. It was proved by the presented data that we had found talented players with the test-system used at the '94-'95 national team's selection, and although they came from a smaller team, they could become national team members. We should analyze their success factor later because they are only at the beginning of their career.

Anyway, it is an encouraging fact that there are already 9 players of this national team who have already got an opportunity to play in the first league.
Knowing this background this test-system needs more refinement.

Which categories should be measured by the tests?

In order to become a successful handball player they have to correspond with some basic physical, corporal and mental conditions. The experts say these factors are determinative in the term of the talent. The test-system adjusting to the sports' profile has to measure these factors and after evaluating the results, and improving them measure them again. So the input and output requirements must be clearly formulated during the preparation, and testing process.

Were the players achieving better results in the test better at the game's components as well?

According to the evaluation of the'94-'95 national team's results it turned out that players, who were added to the national team reached better results in the physical tests than those who were left out. Their performance and creativity during the game showed in which component of the game they were able to provide outstanding performance. This is proved by the fact that despite their young ages they have already shown up in the adult's first league.

Can the good corporal index be associated with better international results?

I can't tell a clear yes or no to this question. Comparing the older age groups we can see the Russian or Serbian national teams had an extremely good corporal index, however, they couldn't get into the 8 best teams of the European Championship.
However, in the case of the '94-'95 national team, my answer is a definite yes. And my answer is confirmed by the fact that we were able to achieve good results at ORV as a first year national team.

A good corporal index can be just a good basis for a successful national team. With special trainings and a reasonable, competitive tendering we are able to create a good national team selected of talented players who can work efficiently together for a long time.

Considering the assessment of four youth national teams' results, the international comparison of two age groups and the results and the operation of a youth sports center, I can determine that my presumptions that I wrote down at the beginning of my dissertation under the title ' Hypothesis' are provably correct.

I can declare that during the selections based on objective measurements there were more players who could show up with their excellent aptitude, and with their aptitude they were capable to reach a more effective international result.

I can confirm that in the smaller teams we can find extremely talented players as well.

I can declare that the function and the responsibility of the youth sports centers is huge in terms of the education of the Hungarian handball players.

I do confirm, by ensuring the appropriate conditions in the youth sports centers a higher level of qualification could be accomplished.

13. Conclusion

For every coach it is a huge challenge to select a youth national team, and to prepare this team to be able to represent their country in the international outfield. In my dissertation I tried to present the difficulties and successes which have occurred during my work. I got to these experiences by continuous analytic work.

- The excellent skilled players must be found by objective measurements both for the national teams and for the youth sports centers.
  Fields selected for measuring must be defined, which will define the profile of handball.
  Excellent corporal and physical indices can't alone guarantee successful results in handball.
- The psychological development of the players must be ensured by the assistance and management of specialists.
- Handball players are parts of the society. Harmony is necessary which helps to develop their sports and the private life.
- The outstanding skills and abilities support high-performing knowledge just in the case of having enough time and patience to learn the technical, and tactical elements, and being able to apply them in high quality competitions later.

By the analysis of the success factor I intended to draw attention to the fact that nowadays in Hungary qualitative youth handball is just a thin-layer of this sport. In the case of talented players the question formulated by Darwin arises: 'Are they susceptible to changes in the game, do they choose the right responds?'

The international comparison shows that the excellent corporal index does not guarantee medal ranking at youth level. Of course, we can get more objective results if we follow up a given age group.

In the present dissertation I have tried to introduce all the work I had done during the youth national teams' selection, preparation, and the work at the youth sports center. The presented analysis contains elements which should be used by the coaches who deal with the handball education of the youth.

I would like to thank dr. Velenczei Attila who provided assistance in processing the statistical data of the men's junior World Championship in 2011 for his valuable support.

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TECHNICAL AND TACTICAL TRAINING OF WOMAN WINGERS AT THE AGE OF 16 – 20 YEARS

Guideline of youth wingers' coaching on the basis of match analysis

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Abstract

Introduction – In team handball the possibilities and tactical activities of a team is determined by the personal skills, qualifications and congenital abilities of players in different positions. Considering all of these factors we can define the tasks necessary for the personalized training and exercises of players – in our case – in winger position.
Among youth players the personalized technical training and constant improvement of the „2:2 / 3:3" tactical relationship should be dominant, without suppressing the improvisational capabilities.

Methods – By analyzing different factors, I tried to map those potential circumstances of development that are emphasized in the current training of wingers and the ones that could determine the direction of further development.

Results – After analyzing the data it turned out, that the examined wingers are still only characterized by two types of shooting and two preparatory activities. Their technical and tactical capabilities are not complex enough.

Keywords: statistical analysis, winger, tactical coaching, technical training, youth female handball

1. Introduction

In youth handball the personalized training of players is underemphasized. The personalized training should include not only the learning of different types of shooting, dribbling, positioning, blocking techniques, but also the improvement of other motor abilities characteristic for handball.

Even at the beginning of learning handball, the aim of athletically well-prepared sportsmen should be more stressed. As part of this, the coordination, working out of efficient running technique – which has also positive effect on speed, spins, strike outs and dribbling skills – can be easily improved. The athletic training alone is not sufficient for the constant running – direction-changing method used in handball, but contributes to make progress.
Of course at the age of starting players the tactical training is needed, but in my opinion, it should be restricted to „1:1", „2:2" and 3:3" types of offensive and defensive tactical elements.

Those kinds of situation drills are suggested to use, when the player has to choose from different alternative options, after quick pondering has to make a decision to find and execute the optimal one. It can be noticed even among adult players, that they are not choosing the optimum offensive tactical method, which depends on the activity of the defender. They are usually choosing a cut and dried solution, based on an automatic program, lacking any individualism.
Coaches are taking too little care developing a whole scale of shooting, „1:1" and „2:2" situations and other derived alternatives. The technical and tactical training without ball is almost totally overshadowed.

The role, activities and further tasks of wingers have changed a lot in the last 5-6 years. They get more and more preparatory function in offense, which contains their actions with and without ball.

A well-chosen drag, dribble, handover, pass or block can cause advantage in the attacking area that can be the basis of a team strategic solution. Next to he anthropometric and conditional capabilities, the individual players' technical and tactical skills are mostly determining the effectiveness of the team.

Every single handbook about the fundamentals of handball discuss the technical and tactical training of players – including the wingers, but as far as I know, there is not any study published yet, which would offer a practical guideline to the training of players in winger position, based on analysis of preparatory and finishing formations. Usual studies after world competitions provide only numerical information about goals from wings, localization of goals from the aspect of the goalkeeper.

2. Methods

During my study I made an effort to map the most important technical and tactical attacking elements from the aspect of shooting on target. This study is about the statistical analysis and evaluation of matches of youth and junior international, first and second Hungarian National League, Champions League competitions. In my mind, the evaluation of matches from the aspect of wingers could help the improvement of the general and specialized training practice.

This analysis is made by 18 matches with the following distribution:

1 – 4: international junior events
5 – 8: National First League junior events
9 – 10: National First League youth events
11 – 14: National First League adult events
15 – 18: Women's Champions League events

I used the next considerations:

2.1. Distribution of different shooting types from winger position

Curved shot
Finish by lay-away shot
Pulled shot and lob
Spinning
Fly/volley shot

2.2. Movements and other activities

„1:1" dribbling as for the successful finishing
Cuts and arrival
Blocking: standing in front of, sideway and from behind
Dribbling
Direct assist
Scoring against disorganized defense
Positioning for strike outs
Set offs

3. Development

Every book about handball deals with technical and tactical training, in variable depth and quantity. But as I mentioned before, there is only a small amount of publications containing movement analysis of winger position players. Bucchetti and Javier Cuesta wrote several articles in subject of running distance and movement analysis.

The efficiency of wingers is determined by the proper execution of adequate movement and shooting patterns, taking care of the goalkeeper's action. The wingers have also increasing significance in the defensive play. They can perform diverse technical

elements; choosing and implementing the suitable ones are crucial for the success of both the person and team.

What are these essential activities?

3.1. Offense without ball

1. Waves – starts after an intercepted pass or a steal, having an offensive advantage depends on the speed of the winger. In first and second wave the winger's position offers an immediate space advantage on the retreating defenders.
2. Splitting the attention of defenders with movement – it can be either running without the ball, or maneuvering to a position, where the defender should split her attention across the area (e.g. corner) and her own attacker.
3. Breakaway from defender – it is used when the defending team – as part of their strategy - rush on the winger to lock out of game, the breakaway is fulfilled by running without the ball.
4. Cutting, retreating – a type of position changing in a well defined way. During this the player does not cross the longitudinal axis of the field, coming back to the original position is the so called retreating.
5. Sweeping through, retreating – that type of position changing game, when the winger crosses the longitudinal axis of the field, even to opposite winger's location, then concerning the offensive situation comes back to her original position.
6. Blocks – Technical/tactical solution characterized by the relative position of the defender and attacker.

3.2. Offense with ball

1. Paired relations: winger – backcourt, winger – center backcourt, winger – pivot,
2. Winger – winger, as the effect of offensive tactical elements.
3. Connecting the two offensive sides – that kind of offensive activity with ball, when the offensive sides are under continuous stress by combination of sweeping through with the ball and block.
4. Dribbling – refers to the maneuverings of a ball around a defender through short

skillful taps, with the intention of misleading the opponent to drive her into a disadvantaged position.

5. Blocks, running free – solution performed by dribbling with one or more passes, mixed with one type of blocking (in front of, from behind, from side)
6. Shooting on target – usually a strong shot of the ball with the aim of scoring.

3.3. Defense

1. Retreating – a form of primary defensive activity, what is defined by strategic and tactical circumstances (wideness, depth).
2. Shrinking and locking the attacking area – promoting the effectiveness of defense by moving towards in depth and preventing the passes, mostly for tactical reasons.
3. Tackle – the meeting of the attacker's and defender's chest or arms, in order to prevent the attacker from shooting on target, passing the ball, dribbling, running in or through.
4. Movement to steal the ball – one kind of defensive tactical activity that fits into the team's strategy, within the high quality of interceptive action is necessary.

3.4. Role of wingers

In modern handball, players in winger position should undertake and perform more and more complex offensive and defensive actions. In defense, their function is augmented in ball-traps and ball steals, in offense they should be involved in preparation against closed defense more intensely. Certainly, their role in offense against disorganized defense is still primary.

In offense against set, closed defense the complexity means they ought to play competently in pivot position. The repertoire of technical and tactical components has been widened. I my view, the percentage of „1:1" direct shooting from winger position has been smaller and smaller compared to the previous years.

Shooting variability of female wingers usually does not show much diversity. Even now, shooting at the height of the take-out is typical. There are only a few players capable of shooting on target from the different height or wideness effectively.

The number of wingers' finishing action is strongly limited by the strategy of the defending team (opened, closed, mixed), and the quality of „2:2" attacking relations.
The real question is what those technical and tactical elements are, which do play the most important role in the development and performance of a versatile winger.

Improvement in quality of finishes from pivot position should be carried out during specialized coaching, due to the complexity of wingers' tasks. A well-trained, versatile winger is able to split the defenders attention, lock-out a defensive area, and score from almost every position.
These conclusions based on analysis could be only guidelines, because the training tasks are influenced by the start-up skills of players. Different players in different age, experience, condition, technical and tactical abilities do need different training plans.
What are the factors that mostly determine the effectiveness of wingers?

3.4.1. Anthropometric measurements

Height
Weight
Length of limbs
Distance of palm and fingers together

After the W17 and W19 European Championship in 2011 a detailed and accurate analysis of anthropometric measurements of players – including wingers – has been performed (by Frantisek Urban, Robert Kandrac and Frantisek Táborsky).
Next to the length of the upper limb, the speed of the shooting arm is also important in finishes. The interval between a fake shot and shot is also decisive.

3.4.2. Motor capabilities

(László Harsányi: Edzéstudomány I. – 2000)

Coordination

Strength

Speed

Stamina

Flexibility

Looseness

Kinesthesis

Balance

Rhythm

Speed coordination

Spatial orientation

3.4.3. Dribbling activity

Dribbling is an activity with the ball that needs adequate response and optimal decision-making within short intervals in the given situation.

3.3.4. Anticipatory skills

It means the anticipatory assessment of the defender's and goalkeeper's action, then picking the most suitable reaction and attempt shooting. This skill is important both in retreat to defense and in counter attack.

3.4.5. Choosing the most suitable type of shooting

The player ought to choose considering different issues, which are:

Spot of shooting – from the wing, from pivot, from distance

Angle of the goal from the wing

Distance from defender

Direction of jumping

Place, physics, style, activity of the goalkeeper

3.4.6. Quality of performance of the task, technical and tactical elements

The effectiveness is defined by the quality of the player's acquirement of the movements and activities with or without the ball. Choosing and further on performing the right technical and tactical element in the actual situation both needs a lot of practice and a sort of conditioning. A certain in-game situation will trigger the same responses; the proper tactical maturity is coming by the sport age with the help of continuous theoretical and practical training.

4. Results and discussion

4.1. Relations between different shooting types and efficiency

There is a strong relation between actions finished with shot, their type and the efficiency.

Among teams of younger players – which also presume a lower sport age – the different types of shooting are rather few. This fact is not only resulting from the lower level of technical training at this age, but also the consequence of the anthropometric and mental immaturity and underdevelopment of other related skills. The system of connective tissues, like muscles, tendons and bones, mobility of joints determines a player's – in our case a winger's – preferable type of shooting and efficiency.

A well-trained winger can perform not only strong shots, but also delicate movements, bending, spinning and pulled shots with good results.

A winger's direction of movement can have positive or negative effect on the type and quality on the subsequent shot. It is relevant if the jump points towards the 4-meter line or the goal.

The direction of jump – that is described by the relation between the feet and the goal, and the movement of the sweeping leg's knee – may have the most significant role in finishes from the wing. The direction and dynamics of the sweeping leg is important for the height and distance of the jump. It has consequence to be effective against

goalkeepers with different techniques. A special subtype occurs when the winger is starting the jump with the same side leg as the hand holding the ball.

The direction and angle of jump is influenced by the relative position from the goal- and sideline where the player gets the ball. A jumping player who is moving from the corner can reach a better shooting angle, than the one from sideline. The efficiency of players starting from the corner is remarkably higher than that one of players starting from the sideline. The success ratio is also lower in shooting after dribbling, because of the lack of zip and dynamic. The success ratio in winger position after dribbling sideways, continued by cutting towards the direction of the shooting hand is higher, than cutting on the lateral side of the defender. It results from difficulty and the better angle of jump in that case.

Different types of shootings show typical patterns depending on the spot of the shot. The shooting angle, relative distance (and direction) between defender and attacker are also key features for the appropriate technique. This kind of classic shooting types are the next:

from throw-out: jumping in, curving, spinning
from pivot position: falling in, pulled, curved shot,
twisting in: jumping and shooting or jumping and curved shooting

According to the analysis and practical experience the efficiency of attacks from wings are influenced by the speed and the distance between defender and attacker. There is a higher percentage of choosing not the suitable shooting type, or performing with poor technique in case of a fast defender moving in from sideways. This also applies after throw-out and finishing from wing. The reason is most probably the fear of impact and injury.

The activity of goalkeeper is also a factor that has a remarkable effect on a successful finish. Goalkeepers with different abilities (height, length of limbs, weight, centre of gravity, etc.) do need different finishes. Different handball-schools and cultures teach and use distinct style; therefor the successful finish is obtainable with different technique of

shooting.

After all of those considerations, the proper implementation and quality - regarding the personal qualification, abilities and style - of shooting is primary. There are some types of shooting typical for a winger that are different in some phase than the common technique. It should not be corrected, if it does not have any negative consequence on the efficiency.

Evaluation of different types of shooting from wings in terms of efficiency (Attachment No. 1.)

Efficient finish after attacks from the wings shows significant difference between adult and youth / junior players on international matches. The reason can be the higher quality of goalkeeping and the lower angle of jumping, coming from the more efficient defensive work. (W17 ECh, Brno - 56%, W19 ECh Netherland - 57%, W ECh - Denmark/Norway - 45%)

4.1.1. Curved shot

During the analyzed matches, it was numerically dominant compared to all other techniques. Moreover, its efficiency was also remarkably the leading one. This statement is true for every match in every age and level. Compared to the other techniques this shooting is easier to learn, it's complexity if lower.

4.1.2. Finish with lay-away

Formerly it was used by wingers playing on the same side as their throwing hand. Nowadays it is getting more popular among player on the other side, using it after a fake shot, making the goalkeeper to move in the direction of the throwing hand. Female players rarely use this technique efficiently; therefore the number of attempts is also low. Multiple issues may explain this, like:

height of jump is not suitable for carrying out a fake shot

the muscles of the trunk are not strong enough

the interval between the elements (fake shot and lay-away) is too long and the goalkeeper is able to react

4.1.3. Pulled shot and lob

Difference between pulled shot and lob is based on the height of the flying ball; therefore the movement of the throwing arm is slightly different in the finishing phase. The pulled shot has a lover altitude above the head of goalkeeper, but in the lob the movement of shooting is not stopping, only getting slower. They are the second most commonly used finishing techniques among wingers. The accurate performance is not easy, because the player should pay attention at multiple things during the flying phase.

Distance from origin of jump in the flying phase (in height, wideness and depth in direction of goal) is determining the successful finish. Low altitude of jump makes the ball impossible to reach the goalkeeper's plain of defense high enough, and a too wide jump can cause arrival excessively sideways. If the jump is too much in depth, the player will arrive too close to the goalkeeper and will not have enough space for layup.

4.1.4. Spinning

A brand new type of spinning is when the ball spinned upwards. When should it be used? If the goalkeeper should close all the other potential corridors, forcing the winger to use a creative solution. It is not usual even among adultfemale players, but there is tendency for using it in younger age. It has the lowest ratio both for attempt and success.

4.1.5. Fly/volley shot (= Kempa)

This very spectacular type of shooting is mainly used by wingers with excellent dynamic leg strength. It has the advantage that the player gets the ball right in front of the goal, making it impossible for the defender to interact by not committing a fault. Its difficulty is coming from receiving and preparing the ball for shooting in the air. Receiving the ball is followed by a shooting - according to the technical skills of player. Usually it is a curved shot, but a gifted, well-trained winger can finish with layup or spinning. Not commonly used, because it depends on the technical abilities and accuracy of the passing partner and the sharpness of the winger. It requires very good timing of the two players, and the "believable" strike of the passing player is necessary to threaten the defenders for shooting on target.

4.2. Distribution of finishes and preparatory activities in percent

(Attachment No.2)

In terms of strategy, players in wing positions do have complex tactical tasks for themselves, for a subgroup and for the team as well.

4.2.1. First wave attacks against disorganized defense – direct and indirect starts

In this kind of wave the wings should consider two things:

Will she be able to finish the attack by herself directly or after dribbling?

If there is no real chance for that, who will be the player following in the second wave, to whom will she have to pass the ball to score before the defense is setting.

This type of fast counterattack can be after:

- the opponent finishes the attack with unsuccessful shooting, eg. the goalkeeper saves, the ball hits the post or the defender's wall
- the formerly defending team gets the ball by interception
- the ball is taken from the formerly attacking team by the referee, e.g. technical fault, passive play, offense fault, etc.
- the concerned players are noticing the possibility and able to perform precisely a fast goalkeeper shot.

This kind of finish has great significance, because its efficiency is remarkably high, the key is the vulnerability of the disorganized defense. Statistics of the last two published international championships shows high percentage of success (W17 ECh - 72%, W19 ECh - 82%). In adult teams 20-25% of all attacks finish with fast counterattack, that means 7-10 goals per matches.

Usually the finish is carried out after starting next to sideline and staying in that sector. It happens mostly in indirect starts, that the winger moves toward the longitudinal axis of the court, leaving her original sector and she finishes the attack in the middle of the area. Less common, the winger receives the ball after crossing the longitudinal axis and creates a chance for scoring. Generally it is followed after substitution of two players - one with, and one without ball. The result of the analysis affirmed this, the mean was 76,3%. For 6

attacks (finished by wingers) there was 4,5 goals for a team. Controlled by the capabilities of teams there were 11 and 4 attempts as well.

4.2.2. Widening the attacking area by pulling apart the defense

Foremost, the position of wingers in attack is widening the attacking area. With movement to the corner and pulling sideways, they can widen this area even more for splitting the defenders' attention. Continuous broadening is promoting the possibility of "1:1" finish, just as passing after reaching (imitating) shooting position, it helps the partner (pivot) to have a larger area for finish.

4.2.3. Support cuts and shootings with running behind defenders and blocks

These kinds of support are carried out by cutting without ball. Their occurrence is high, because of the increased importance of wingers in arrangements. Running behind defenders is used by wingers, if the opponent is using open-defense (3:2:1; 4:2; 3:3; 4+2), or trying to stop the attacks and keep off the dangerous backcourt with closed area defense (6:0).

Running behind the defenders makes they change and close up to each another, consequently there will be a larger and empty area for the backcourt players coming with high dynamics. In this kind of attacks the block is made behind or next to the defender. If it is next to her, it gives the opportunity for creating a sector for shooting and successful breakthrough or outnumbering the defenders in another zone of the attacking area. The rhythm and the speed of the cut both are essential for the success. It can be done in the same the direction as the ball flight, and the opposite. Cuts behind the defenders come into play more often in attacks of short-handed teams. In these technical variations wingers from both sides combine the block at the side of defender at the same time, just like retreating to the original position. Main feature of both formulas is to make the defenders miscount and go wrong, thus equalize the situation.

4.2.4. Pick and roll for finish from pivot position

Finishes with scoring by wingers in such circumstances are rare. The reason could be the lack of training (specialized for this) and the typical physical parameters of them. Wingers have a handicap in height and weight compared to the inner defenders. Because

of this, it is harder to pass to them; they are less efficient at holding the blocks and at turning inward for shooting. There is a higher chance for them after a bounce pass.

4.2.5 Connecting the two offensive sides by sweeping-through with the ball

It is used against open and closed defense-systems as well. The cut starts with movement without ball, then after receiving the ball the winger running at the 9m-line tries to pass to center back or opposite back. Preferably the pass is continued by a block or a screen at the wall of defenders and change to 4:2 attacking system. Connecting the two offensive sides by wingers is a commonly used tactical variation in short-handed attacks.

4.3. Application of the results in practice

4.3.1. Motor training

During a handball match a player conducts 190 rhythm-variations, 279 switches of direction and 16 jumps (with or without ball) by mean. During the 60 minutes the players use 485 movements with high-intensity that is 8 per minute with good approximation. The wingers run 3600 – 4000 meters per game, most of it in high-intensity zone, above 70%. (Cuesta, 1988).

Through motoric training we should mind these data and shots in fatigue-zone. Drills should be set-up in such a way that after learning the technical element (dribbling, block, shooting, strike, etc.), the player will be efficient at a heart rate of 140 - 200 too.

For the success of wingers it is important to avoid any negative effect of fatigue. Improvement of skills of condition and coordination are needed as a whole in the complex training of a winger.

For this complexity, a well-designed and continuous athletic training is crucial. One time special athletic training per week will give some positive effects on all the skills mentioned before. These exercises help to develop energy-saving movement, thus increase celerity (speed of running, jumping, dribbling, etc.). Efficiency of shooting is granted by the stability of breathing and the ability to reach the most horizontal position.

It is resulting from the improvement of coordination skills and giving large significance to them, mostly for kinesthetic and balance. These types of drills are well described in the literature: self-weight, external opposition, jumping, running, gymnastics.

4.3.2. Technical training

Learning of exercises should be in the order from the easiest to the most difficult, depending on the motor capacity and the technical abilities of the player.

a) practicing shooting

1. while sitting
2. on one knee
3. standing
4. straddle-legged
5. 3 steps after receiving the ball
6. 2 steps after receiving the ball
7. 1 step after receiving the ball
8. exercise No. 5 - 7 with aggravation - strain
9. semi-active and active defender
10. perform with dribbling
11. exercise No. 9 - 10 during/after strain
12. shooting after jumping from a footstool to increase air-activity

b) using compelling tools

1. defining the origin and landing zone of the jump
2. placing a puppet in the middle between the player and the goalkeeper
3. using obstacle at the height of jump

c) complex exercises, match simulations, modeled drills *(Attachment No. 4.)*
1:0, 1:1, 2:2, 3:3

5. Conclusions

The evaluated 18 matches covered different ages, technical and tactical abilities, but there were only small differences concerning the aspects examined. This difference occurred mostly in the efficiency of the attempted shootings. Of course, a different analysis with higher number of matches would have given a more precise evaluation, but these results are also showing the flaws of the current system, and the correction of them should move forward the effective coaching of wingers.

1. As for different types of shootings, it turned out that even at Champions League matches the finishing solutions are limited only to two options, the curved shots are dominant. The second most common are the pulled shot and the lob but the letter one is more usual, because the former one needs more dexterity and skillfulness. The other three types were only occasional; it is hard to be objective at low numbers.
Success of shooting was 57.3%; it is showing one stream of our tasks to do. At the beginning of my paper I mentioned, that the scale of techniques of the wings is not broad enough, but the improvement has to be augmented to the excellence of motor skills. It has to be defined, which type of shooting requires what kind of special ability. It is worthwhile for some further analysis to find out which area of origin, after how many steps, and within which distance from defender is the most efficient for shooting from the wings.

2. Analysis of shootings and other activities shows larger variety. As it was expected, the number of preparatory activities were high, first of all the cuts and sweep-through. It was between 4 - 12, influenced by the quality of defense and number of attacks against disorganized defense. Nevertheless, number of finishes by wingers after cuts and sweep-through is low.
The other activity in high number is participation in attacks against disorganized defense, mostly in the first wave, that was 8-10 of 10 - 14 per matches, with the result that I presented before (70-80%).
Successful finishes after blocks by wings were minimal in the statistics, learning this

technique would be beneficial. Similarly, initiation by dribbling with the ball was uncommon, with a score rate of 31,25%. It can by explained by the higher level of defense and the break of dynamic and worse position for shooting after dribbling. Complex dribbling hardly happened at all.

3. Suggestion of further examination comes up with this analysis; it would be useful to set up a scoring system that reveals the lack of skills of wingers more accurately, showing a good way of improvement. Part of this system could be:

Influence of the distance between attacker and defender on decision of shooting type

Influence of the length of upper limb on decision of shooting type

Influence of the motor capacity on the effectiveness of the finishes

After writing this thesis the author had the following impressions:

It is necessary to work out a specialized training method suited for each position (widely used in other sports) that makes a player able to play a position on high level. This would make the play more attractive, gaining more support for handball, more spectators and interest of possible sponsors.

Is the matching procedure for a position good enough? Which sport age is the most suitable to start specialized training for a position?

I am not sure, if the current practice and method is able to fulfill the expectations for modern handball. By that I mean the need of proper selection of players by abilities and high quality training to improve athletic and motor skills. We should not underrate the significance of related sports, like swimming, squash, martial arts (wrestling, judo).

I hope these last recommendations (and hopefully my thesis too) will get the attention of specialists, who are able to move the handball game into the direction of new challenges by scientific research and publication.

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Attachment no 1.

Analyzed by \ Match		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
Distribution of different shooting types from winger position	Curved shot	5/2 11/5	6/3 5/2	4/3 2/2	3/0 6/5	14/6 3/1	8/4 7/4	10/5 4/1	4/1 6/4	7/3 6/5	4/2 5/3	5/2 9/7	2/1 7/2	7/5 4/2	5/3 6/5	7/3 4/3	4/2 6/4	4/3 3/0	7/6 8/6	208/115 55,2 %
	Finish with lay-away	1/1 1/1	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1/1 -	- 1/1	4/4 100 %
	Pulled shot and lob	- 3/3	3/2 2/2	2/2 1/1	1/0 -	2/1 -	3/1 -	2/1 -	1/0 3/1	2/1 3/3	3/2 2/2	2/1 4/2	- 2/0	2/1 2/1	2/1 4/3	3/2 2/0	3/1 2/2	2/2 4/2	3/2 -	70/42 60 %
	Spinning	- -	- -	1/1 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	1/0 -	- -	- -	1/1 -	- 1/0	4/2 50 %
	Fly/volley shot	- -	- -	1/1 -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- 1/1	2/2 100 %
All types /match		21/ 12	16/ 9	11/ 10	10/ 5	19/ 8	18/ 9	16/ 7	14/ 6	18/ 12	14/ 9	20/ 12	11/ 3	15/ 7	18/ 12	16/ 8	15/ 9	15/ 9	21/ 16	288/165 57,3 %

Attachment no 2.

Analyzed by / Match		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Mean
Movements and other activities	Simple dribbling	3/1 3/2	4/2 1/1	2/0 2/1	4/0 2/2	- 1/0	4/1 2/2	2/1 1/0	5/2 2/1	4/1 3/2	5/1 5/0	3/2 2/0	2/0 2/1	3/1 4/0	4/0 2/2	5/1 3/1	2/0 3/0	2/1 2/0	2/0 4/1	5,8
	Complex dribbling	2/0 1/0	1/0 -	- -	- -	- -	2/1 1/0	- 1/0	- -	- -	1/0 -	- -	- -	- -	2/0 -	- -	- -	- -	- -	0,6
	Running in/through	4/0 10/1	5/1 8/2	7/2 7/1	5/0 5/0	2/0 2/0	5/0 6/1	5/0 6/0	4/1 6/5	8/1 8/4	7/0 8/1	7/0 7/1	9/0 8/1	8/2 9/1	7/0 8/2	9/2 6/0	5/1 8/1	5/3 9/2	1/0 4/0	12,7
	Blocks	1/1 1/0	5/2 4/2	3/1 2/0	3/2 3/2	- 4/0	3/2 3/2	- 2/0	2/0 -	4/0 5/1	2/0 4/1	5/0 2/0	1/1 2/0	4/1 6/0	4/0 6/2	5/1 7/1	3/1 6/2	3/1 2/1	1/0 2/1	6,1
	Assist	- -	- 2	4 2	4 5	- 1	4 5	2 2	- 3	2 2	- 1	1 1	2 1	- -	- 2	1 1	- 2	- 1	- -	2,8
	Set-off	8 8	7 10	9 7	6 4	10 8	9 7	9 8	7 12	6 8	6 4	8 5	7 8	8 5	6 8	9 7	8 8	7 7	6 5	14,7
	Scoring against disorganized defense	4/3 5/4	8/6 7/4	8/7 6/5	3/3 6/4	4/3 2/2	8/5 6/5	8/6 5/4	9/6 11/8	9/7 9/8	8/6 9/6	3/3 5/4	3/3 7/5	6/5 3/1	7/4 8/7	6/5 5/3	4/3 5/4	4/4 1/1	5/4 4/3	211/161 76,3 %
Mean of all activities for the team		**25**	**30**	**29,5**	**25**	**18**	**32,5**	**25,5**	**30,5**	**34**	**30**	**24,5**	**26**	**28**	**32**	**32**	**27**	**21,5**	**17**	28,5

Attachment no 2. (continued)

Distribution of different shooting types

	Curved	Finish with lay-away	Pulled, lob	Spinning	Fly/volley
U 19	58/42 **72,4 %**	58/2 **3,4 %**	58/12 **20,8 %**	58/1 **1,7 %**	58/1 **1,7 %**
NB.I. 19	67/56 **83,6 %**	-	67/11 **16,4 %**	-	-
NB.I. 17	32/22 **68,7%**	-	32/10 **31,3 %**	-	-
NB.I.	64/45 **70,3 %**	-	64/18 **28,1 %**	64/1 **1,6 %**	-
EHF CL	67/43 **64,2 %**	67/2 **3,0 %**	67/19 **28,3 %**	67/2 **3,0 %**	67/1 **1,5 %**

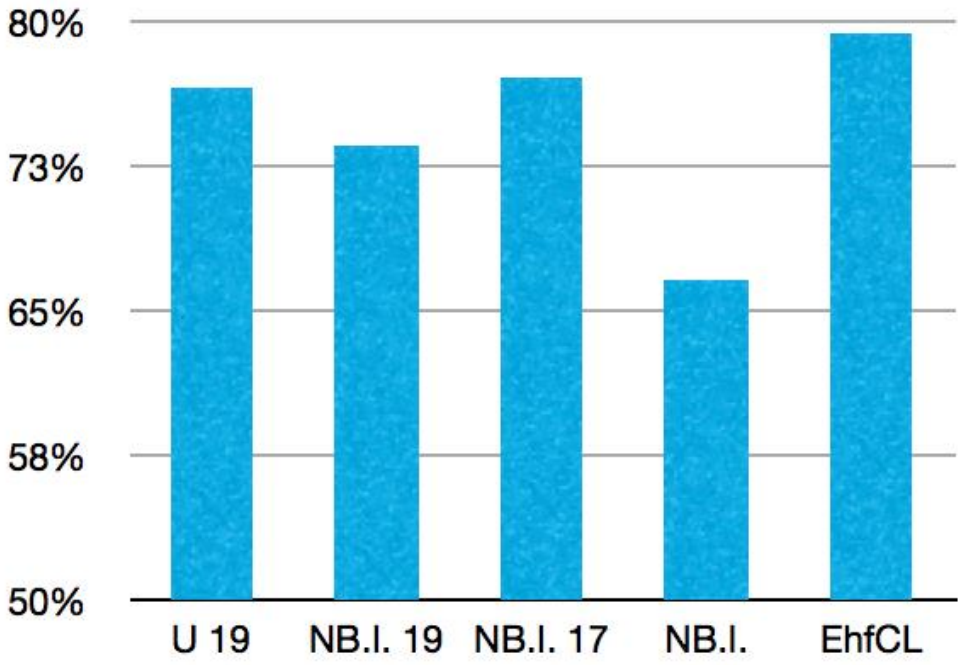
Succesfull finishes

	Curved	Finish with lay-away	Pulled, lob	Spinning	Fly/volley
U 19	42/22 **52,4 %**	2/2 **100 %**	12/10 **83,3 %**	1/1 **100 %**	1/1 **100 %**
NB.I. 19	56/26 **46,4%**	-	11/4 **36,4 %**	-	-
NB.I. 17	22/13 **59,0 %**	-	10/8 **80,0 %**	-	-
NB.I.	45/27 **60,0 %**	-	18/9 **50,0 %**	1/0 **0 %**	-
EHF CL	43/27 **62,8 %**	2/2 **100 %**	19/11 **57,9 %**	2/1 **50,0 %**	1/1 100 %

Attachment no 3.

Efficiency of fast counterattack by wings

	Shot/goal	%
U 19	47/36	**76,6**
NB.I. 19	53/39	**73,6**
NB.I. 17	35/27	**77,1**
NB.I.	42/28	**66,6**
EHF CL	34/27	**79,4**



Efficiency of fast counterattack by wings in percentage

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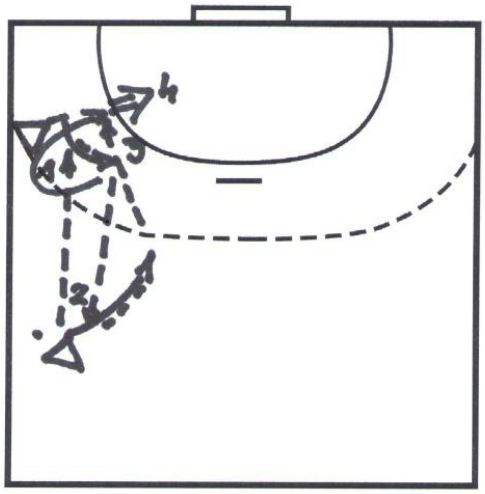

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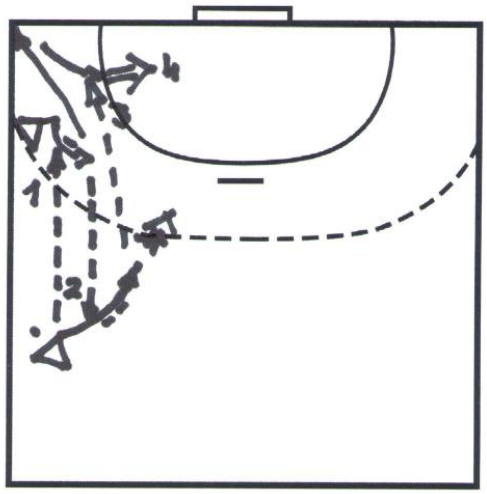

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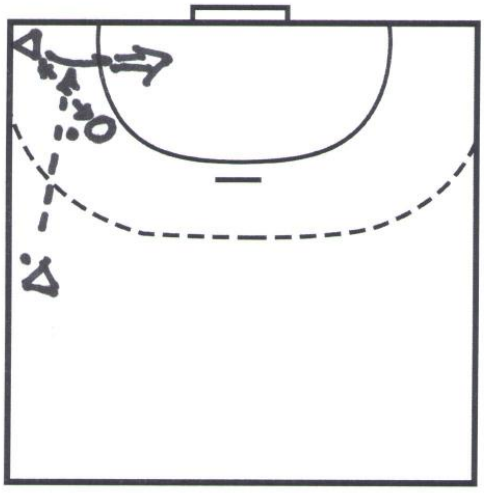

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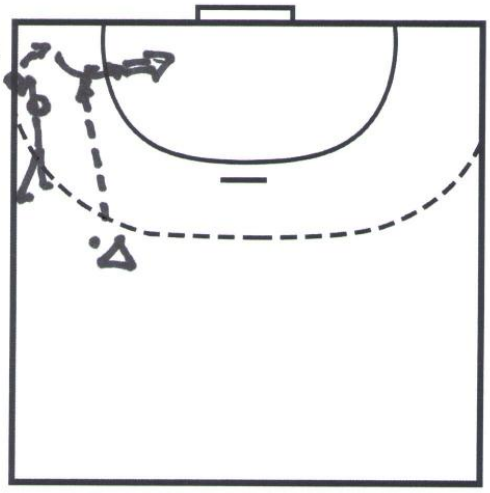

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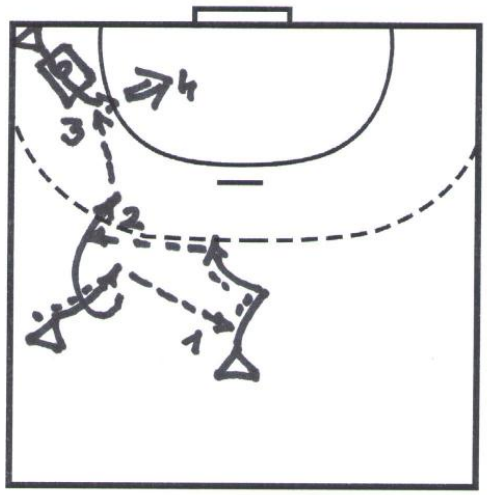

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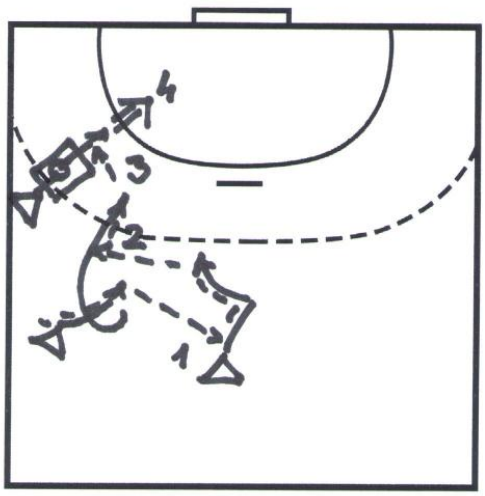

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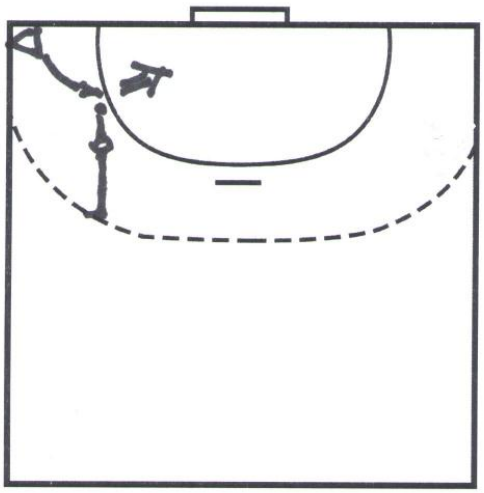

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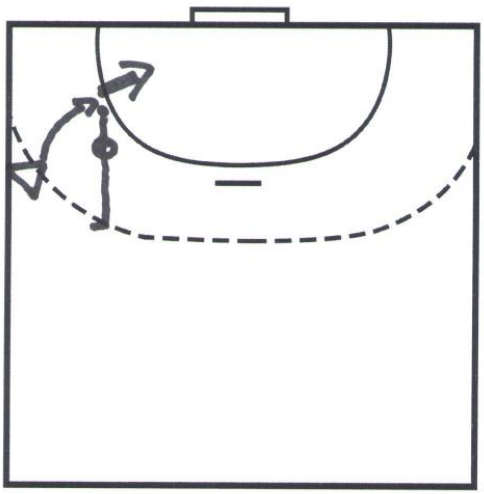

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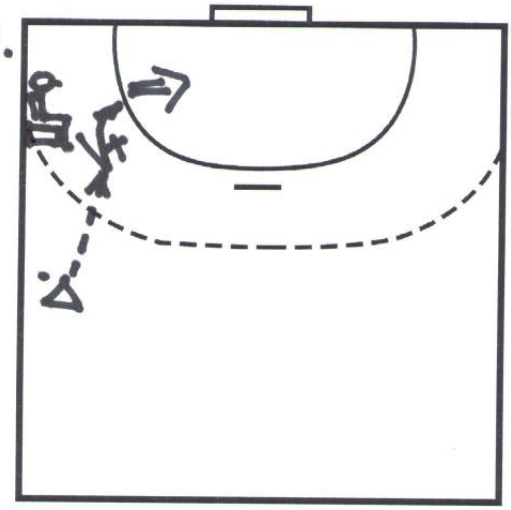

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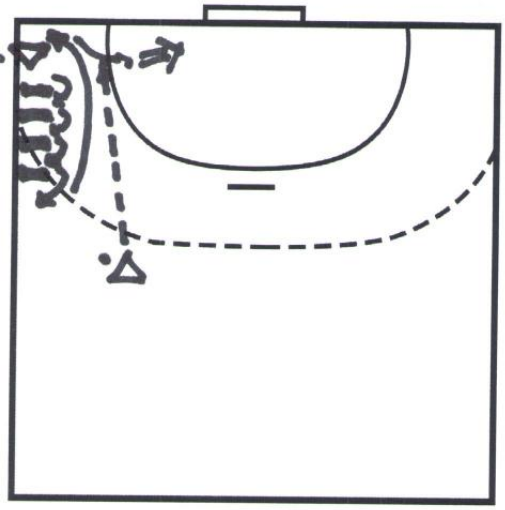

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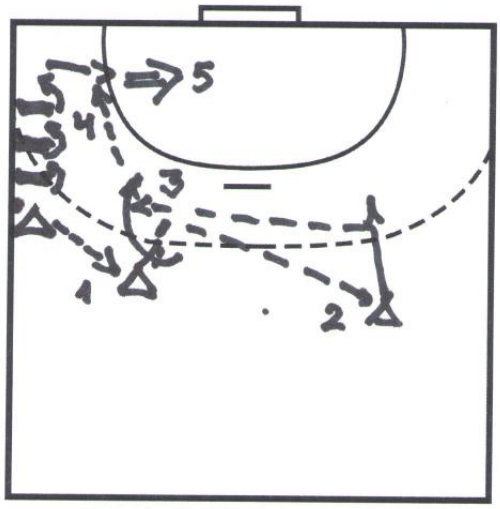

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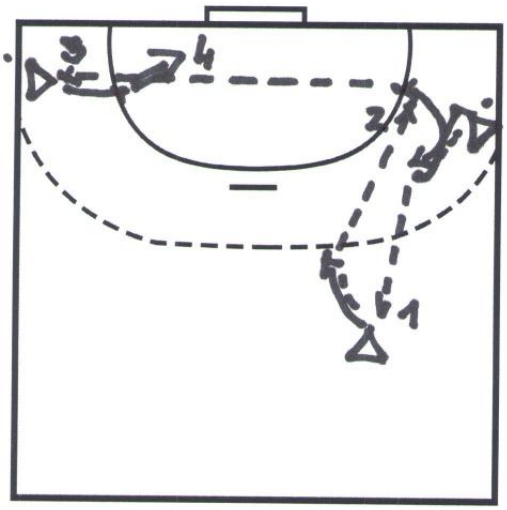

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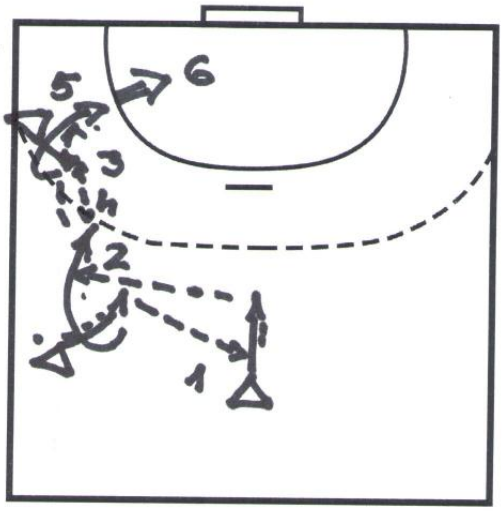

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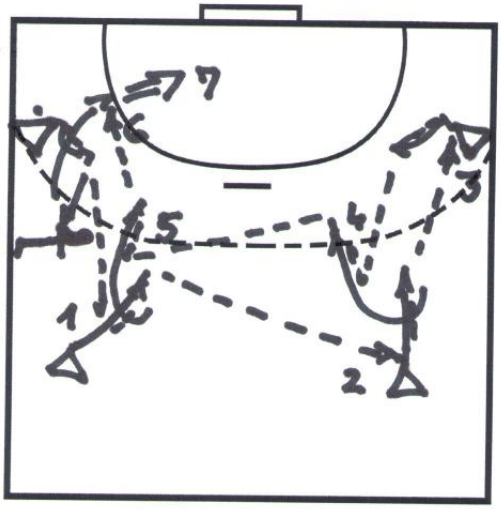

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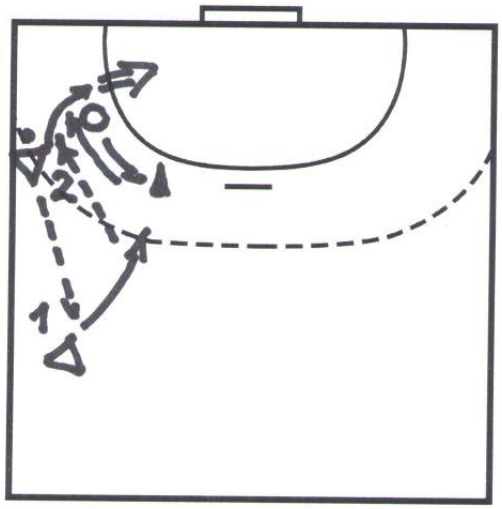

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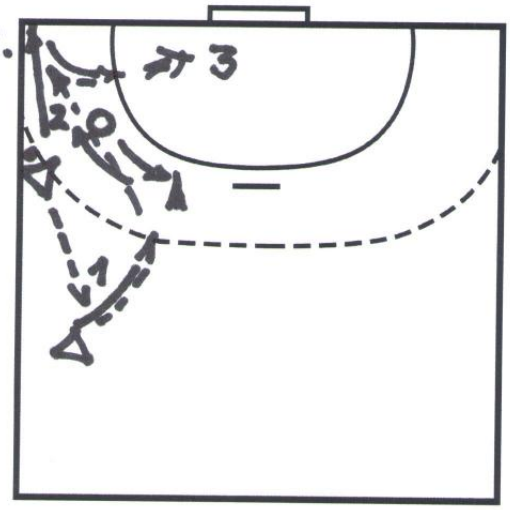

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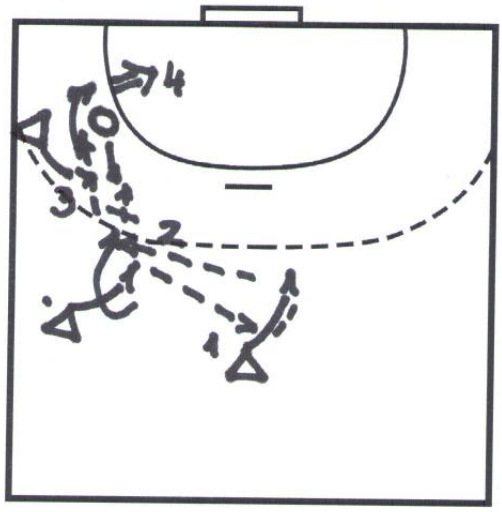

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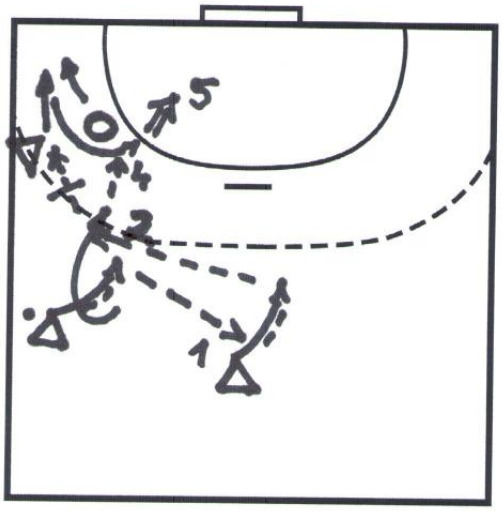

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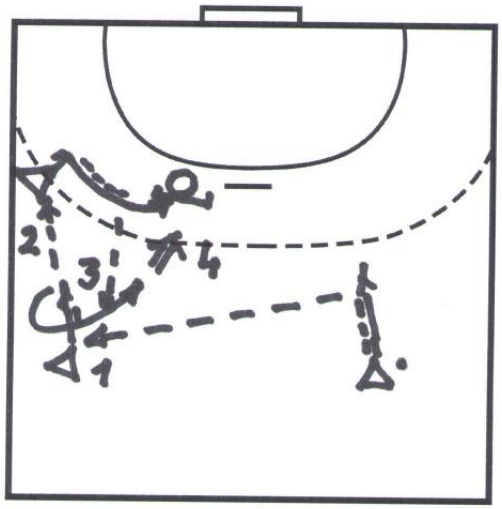

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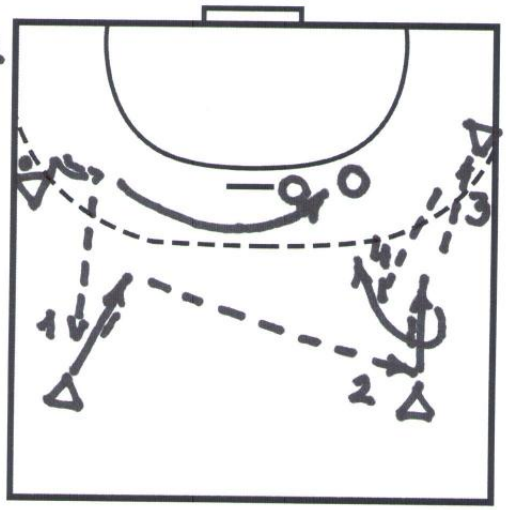

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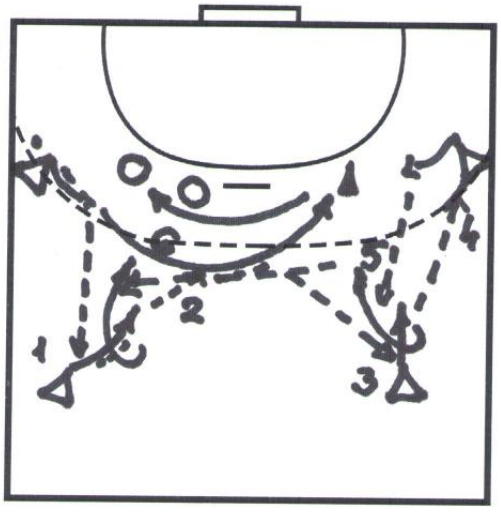

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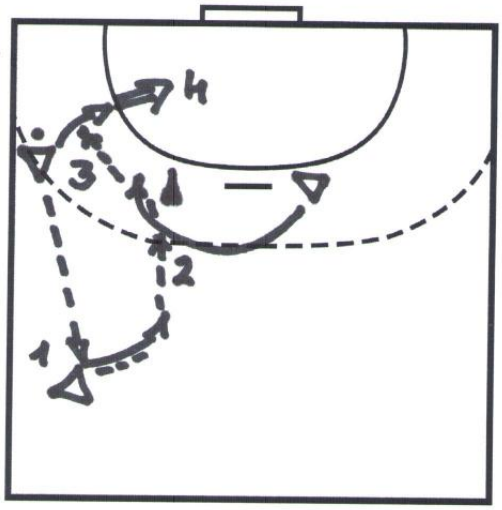

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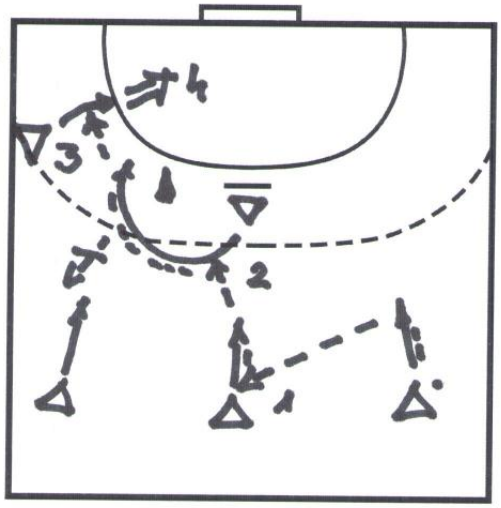

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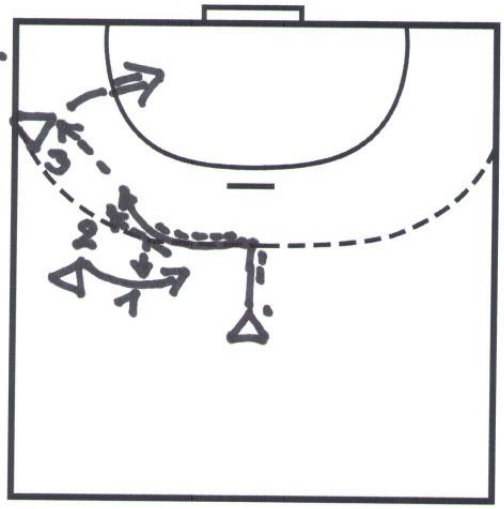

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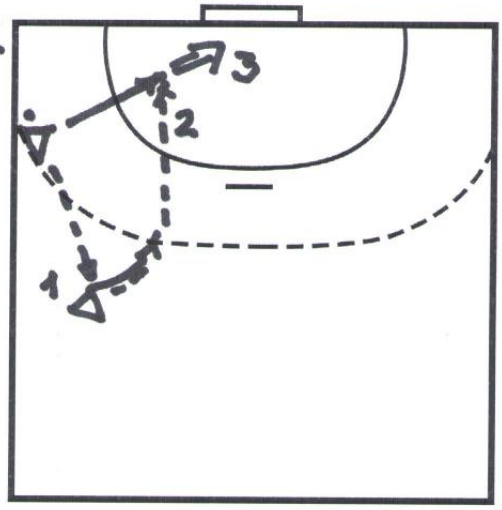

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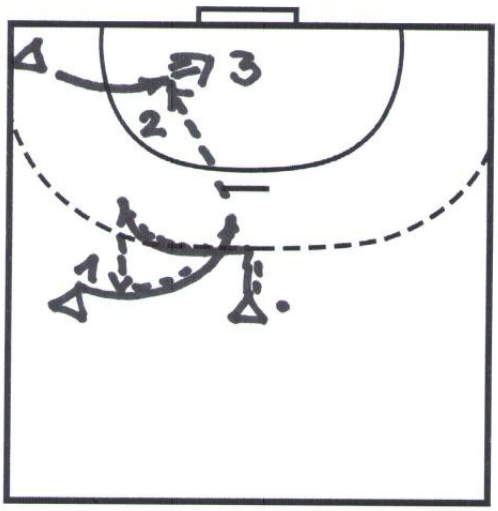

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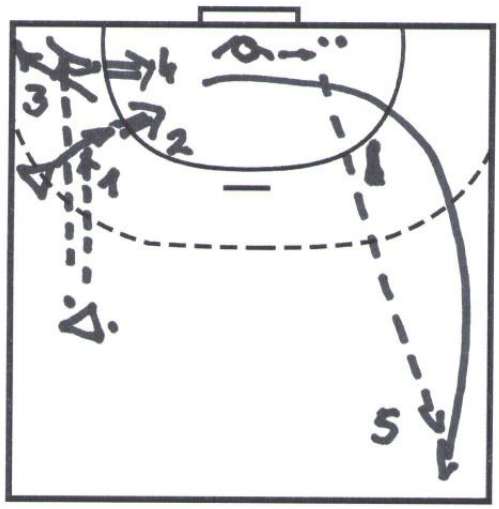

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