The range of playing sports combat in the handball game depends on the motorial, technical and tactical preparations.

It is obvious that a winner is always better prepared and can successfully implement a tactical plan than an opponent.

Every experienced coach desires to obtain as much information about own team and opponent’s as possible. In implementing this task the game recording statistical methods, elaborated at the University Gdańsk, are very helpful.

Gathered data can describe the sports value of a particular team and its players, indicate some technical and tactical tendencies and then induce coaches to consider such solutions which influence the scoring.

The statistical material, from European Championships in Italy in 1998, has been considered.

THROWING EFFICIENCY

An average value of 53.7% indicates, for a long time, the persistence of the efficiency of over 50%. The highest were the Sweden’s and Yugoslavia’s teams – 60% (the 1st and the 5th in the Championships), the lowest in the teams which took the last two positions (Italy of 48%, and Macedonia of 43%).
Declining in penalty throws efficiency has been recorded (of 71%). It has influenced by higher standards of goalkeepers and perhaps, mental advantage in a direct confrontation – a thrower versus a goalkeeper. It is commonly believed that a performance of a penalty throw should result in scoring thus the responsibility for scoring weights on performer’s mind. The highest efficiency demonstrated the teams from Hungary – of 92% and Russian – of 79%.
FAST ATTACK EFFICIENCY
It is worrying about relatively low efficiency index of 75%. Unfortunately the Sweden’s team obtained poor result of 69%, the same as the German’s team. The best were the French – 83%.

Table No 3.

GROUP TACTICAL ATTACK EFFICIENCY
Clear progress (average of 50.4%) has a close relation with apparent increase in technical skill referring to throws as well as very good teamwork in the groups of 2-3 players. The best result achieved the Swedish player – 59%, the Yugoslavia’s team – 57%, and the Macedonians were the lowest – 42%.

Table No 4.
A GOALKEEPER EFFICIENCY

Recently obtained results prove that the goalkeeper’s role in a game is of the utmost importance. A goalkeeper’s attitude mainly influences the final result of a game. The best goalkeepers were in Yugoslavia’s, Spain’s and Sweden’s teams; and the worst in the Hungary’s, Macedonia’s, Croatia’s and France’s teams.

Table No 5.

OVERALL EFFICIENCY OF THE ATTACK

Evaluating this figure we consider: a number of scores to a number of actions
\[
\frac{\sum A \times 100}{\sum B}
\]

\(\sum A\) — total actions; \(\sum B\) — total scores

The obtained results prove sports supremacy of the teams that got top places in the Championships. The best result has Sweden of 47,7% and Spain 45,2%. The lowest result has Macedonia’s team of 33,5%.

Table No 6.
EFFICIENCY IN DEFENCE

Evaluating defence, the following method has been accepted; it was attempted that two teams if have finished the game in a draw, they will get 50 pts. In case one team wins, this team has additional 5 pts at the loser’s expense and extra one point per each goal scored.

For example, in a game of A and B teams the result is 25:20. The A team, as a winner gets 60 pts (50 as a winner and 5 per each scored goal).

The B team gets 40 pts. (50 minus 5 as a loser and 5 per each goal lost).

This simple method allows to evaluate the defence game. The said method was used in evaluating the all matches during the Championships.

Table No 7.

OVERALL EFFICIENCY IN ATTACK AND DEFENCE

The mentioned above method was used to evaluate the efficiency. The final result was determined by overall efficiency, previously expressed as a percentage (we have changed into points) and efficiency in defence expressed as the points.

The results from the table No 8 prove the validity of the attempted method, for only in just two cases the final score of the Championships do not go with accordance of the evaluating method.
The Number of Stealing the Ball

It proves the efficiency of the co-operation in defence and activity of this. Few defence actions have been observed which resulted in stealing the ball. Most of the teams attempted not to lose the goal, instead of trying to steal the ball. Average number of stealings during the whole tournament – 24.5, so 3 or 4 stealings in a match what rather displeases. The most active defence played the Russians, Germans, Hungarians and Croatians. The most passive were the Swedish, Lithuanians and Yugoslavians (great surprise).

Table No 9.
**Blocking the Throws**

This technical element plays more and more important role in a game. Efficiency in defence has a close link with goalkeeper’s co-operation with the defence. This tactical variant is of the best of use in the Russia’s, Spain’s and Sweden’s teams. The successful action of blocking also depends on physical conditions of the players who play in the middle.

Table No 10.

![Graph showing the number of mistakes in an attack](image)

**The Number of Mistakes in an Attack**

By the number of mistakes we can measure the technical preparation of the particular players. Usually, the number of mistakes increases when an attack is being accelerated. The participants of the Championships got the average number of mistakes in a match –12.7. This result is not satisfactory, moreover that losing of the ball often results from simple, basic mistakes of catching and passing the ball. The least number of mistakes committed the players from Germany 7,1; France 9,1 and Sweden 9,7; the most was observed in Hungarians 15,7; Lithuanians and Macedonians 15,6.
Table No 11.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Team</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MKD</td>
<td>15.6</td>
</tr>
<tr>
<td>2</td>
<td>ITA</td>
<td>12.3</td>
</tr>
<tr>
<td>3</td>
<td>CZE</td>
<td>15.6</td>
</tr>
<tr>
<td>4</td>
<td>LTU</td>
<td>17.3</td>
</tr>
<tr>
<td>5</td>
<td>CRO</td>
<td>15.7</td>
</tr>
<tr>
<td>6</td>
<td>FRA</td>
<td>15.2</td>
</tr>
<tr>
<td>7</td>
<td>HUN</td>
<td>10.4</td>
</tr>
<tr>
<td>8</td>
<td>YUG</td>
<td>9.1</td>
</tr>
<tr>
<td>9</td>
<td>RUS</td>
<td>10.4</td>
</tr>
<tr>
<td>10</td>
<td>GER</td>
<td>7.1</td>
</tr>
<tr>
<td>11</td>
<td>ESP</td>
<td>9.7</td>
</tr>
<tr>
<td>12</td>
<td>SWE</td>
<td>12.7</td>
</tr>
</tbody>
</table>

**PENALTIES**

The following were accepted as the penalty points during the Championships:

- admonition – one point,
- 2min penalty – 2pts.,
- disqualification -2pts.

Taking under account the said points, we say that the following teams often were playing in reduced number of players:

- CZE – 89pts.
- LTU – 85pts.
- CRO – 81pts.

The least penalty points got teams from YUG – average 7,7pts. a match, ITA 8,6pts. and Spain 9,5pts. It is obvious, that the number of exclusions does not significantly influence the final result.
The obtained results are not satisfactory at all. The average number in a match – 6.2 is very poor indeed. Only two teams had good results: CZE – 9.6 fast attacks in a match with efficiency of 79% and ESP – 8.2 with efficiency 80%. Disappointing is poor performance of the FRA – 5.0 (the highest efficiency of 83%) and SWE 5.5% - efficiency of 69%.

Table No. 13

<table>
<thead>
<tr>
<th>Teams</th>
<th>Avg.No /match</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MKD</td>
<td>5.8</td>
<td>60</td>
</tr>
<tr>
<td>2. ITA</td>
<td>5.1</td>
<td>77</td>
</tr>
<tr>
<td>3. CZE</td>
<td>6.3</td>
<td>79</td>
</tr>
<tr>
<td>4. LTU</td>
<td>5.0</td>
<td>76</td>
</tr>
<tr>
<td>5. CRO</td>
<td>6.3</td>
<td>83</td>
</tr>
<tr>
<td>6. FRA</td>
<td>7.1</td>
<td>79</td>
</tr>
<tr>
<td>7. HUN</td>
<td>6.0</td>
<td>83</td>
</tr>
<tr>
<td>8. YOU</td>
<td>8.2</td>
<td>74</td>
</tr>
<tr>
<td>9. RUS</td>
<td>5.5</td>
<td>60</td>
</tr>
<tr>
<td>10. GER</td>
<td>6.0</td>
<td>82</td>
</tr>
<tr>
<td>11. ESP</td>
<td>6.2</td>
<td>60</td>
</tr>
<tr>
<td>12. SWE</td>
<td>7.5</td>
<td>80</td>
</tr>
<tr>
<td>13. Average</td>
<td>6.2</td>
<td>75</td>
</tr>
</tbody>
</table>
SUMMARY

Gathered and described statistical material has provided a lot of information, mainly for coaches.

Held in Italy the European Championships confirmed a progress in handball, however more dynamic games would have been appreciated. Most of the matches were played nearly on the same levels, and disposition or mental endurance to a particular game influenced a victory.

To properly prepare a team one should take possession of motorial, technical, tactical and motivation tasks; to learn thinking in a game and to solve situations in complex conditions.

A player’s tactical perfection should be manifested in a creative processing of previously obtained information in direct sports combat and in performing a prompt, effective action (it gives a spectacular game).

Shaping the tactical plan one should have an abundant material of own team as well as opponent’s.

In this paper, we have proposed the defence game evaluation based on points, which is, in my opinion, indispensable for overall game analysis. The advantage of this proposal is its simple method, which is valuable theoretically and in practice as well.

It is worthy to recall the research contained in “The characterisation of the handball game” from 1996, where the analysis of the top teams was carried out by means of multiple regression with using step algorithm of variable selection. It was proved that sufficient projection of results can be obtained by considering just 3 factors:

1) efficiency of fast attack;
2) efficiency in defence;
3) the number of actions which engage opponent’s defence, after we work out the situation for scoring, so called “assist”.

The said results should be considered as a valuable advice. Retrospective estimation of the said factors, between our team and the opponent’s, allows to
determine (theoretically) the teams in their struggle for a victory. The analysis may be used for preparing feasible tactical plan for a particular match.

The European Championships indicated the need of searching for tactical and technical solutions relevant to an attractive game.

Literature:
1) Czerwinski. J., 1995, An attempt of projection the result in the handball in the handball game, AWF Gdansk;