

**An Analytical Study of the Technical Performance of Field  
Hockey  
Juniors under (21) Years in World Cup Championship in  
New Delhi 2013**

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**Abstract:**

This study aims through, First: analyzing the goals of all matches of Field Hockey Juniors under (21) held in New Delhi, India 2013 to recognize: {the number of goals scored from free play via (the team tactical performance / the individual performance) from different playground areas for all teams, the number of goals scored via different skills for all teams}. Second: analyzing the technical performance of the German team – winner of the 1st place – in all its matches in the championship, in order to recognize: {the most commonly used team plans, the time of ball possession, the number of goals and ways of score}. The researcher used the descriptive method. The study sample included all the (44) matches of Hockey Juniors under (21) years held in New Delhi, India 2013. The study sample of the technical performance analysis

of German team included all its (6) matches in the championship. The most important results indicated the following: the most commonly used skill in scoring the goals was the ball hit, as it was used in scoring (87) goals, while scoop skill was the least used skill in scoring the goals as it was used in scoring only (7) goals. The longest time of ball possession for the German team of the match time was (40) minutes, while the least time of ball possession was (25) minutes.

**Key words:**

Hockey, matches analysis, technical performance.

**The Introduction and the research problem:**

The researcher noticed, through his follow-up of hockey world championship, that the players during the matches in general enjoyed quick and accurate skill performance in addition to their execution of tactical

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performance in accordance with the nature of each play situation which allowed the player to achieve the best performance in the match. On the contrary, he noticed that the Egyptian players had a slow skill performance in addition to the lack of clear playing plans either in defensive or offensive playing during the match. Also, they did not play the modern hockey which depends on moves, touches and techniques. The World Cup Championship represents the highest technical level of Hockey in the world, and through what the researcher reviewed of specialized scientific references in the field of Hockey sport, and also through the survey of previous studies and researchers via the national network of information in the Academy of technology and scientific research, he noticed that no other researcher in Egypt – as far as he knows – studied or analyzed the technical performance of Field Hockey Juniors under (21)years. This fact urged him to analyze the recent Field Hockey World Cup Championship, to understand the level of technical performance (skills & plans) of

international Hockey teams, in order to help in developing the technical performance (skills & plans) of Hockey players in Egypt, considering it the essence of current research problem.

**Research Aims:**

This research aims through:

**First:** Analyzing the goals of all matches of Field Hockey World Cup Championship under (21) years held in New Delhi, India 2013, to recognize:

1- The number of goals scored from (free play, different penalties) of the participating teams in the Championship (each team aside).

2- The number of goals scored from the free play via (team tactical performance, individual performance) from different areas of the playground, for all teams.

3- The number of goals scored from free play from inside the (16) yards circle (right of the circle, middle of the circle, left of the circle) for all teams.

4- The number of goals scored by players of different lines (attack line, middle line, defense line) from free play and free hits for all teams.

5- The number of goals scored through the different skills for all the teams.

**Second:** Analyzing the technical performance of the German team – winner of the 1<sup>st</sup> place- in all its matches in the Championship, to recognize:

1- The most used team tactics of the German team.

2- The most used passes of the German team.

3- The most used defensive methods, moves and situations of the German team.

4- The penalties which the German team got through the team performance and the individual performance of the team inside the (25) yards' area.

5- Time of ball possession for the German team.

6- Number of goals and ways of its score for the German team.

### **Research Procedures:**

#### **First: Research Method:**

The researcher used the descriptive method of the survey technique as it suits the nature of this research.

#### **Second: Research Sample:**

Research sample was chosen deliberately and included:

1- The research sample related to goals analysis for all

matches of Field Hockey World Cup Championship under (21) years organized by the International Federation of Hockey in New Delhi, India in the period from 6-15 December 2013, number of matches (44).

2- The research sample related to technical performance analysis of the German team – winner of the 1<sup>st</sup> place – which included all its matches in the championship, its number was (6) matches.

#### **Third: Tools & means of data gathering:**

The researcher used several tools and means of gathering data and information related to this research, which are:

#### **1- The Scientific Observation:**

The researcher analyzed the research sample matches in order to obtain the observed information.

#### **2- “Forms for Data Registration” (2 forms for analysis purpose):**

The researcher designed (2) forms to analyze the research variables, appendix (1).

#### **3- Personal Interview:**

The researcher discussed the forms he designed with (3)

experts in the sport of Field Hockey.

#### Fourth: Basic Study:

The researcher analyzed the matches which constituted the sample of the research, during the period from Monday 3/3/2014 to Wednesday 14/5/2014.

#### Fifth: Statistical processing:

The researcher used the percentage ratio.

#### Display & Discussion of Results:

First: Display & Discussion of results related to the analysis of World Cup Champion goals:

**Table (1)**  
**Number of Goals scored via (Free Play, Different Penalties) and its percentage of the teams participating in the championship (for each team aside) N= 44**

No.	Teams	Goals scored from free play				Goals scored from different penalties						Overall total of scored goals	
		Team plans		Individual performance		Goals scored from free hits		Goals scored from short corner hits		Goals scored from penalty hits			
		No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
1	Belgium	4	%16.66	6	%25.00	4	%16.67	6	%25.00	4	%16.67	24	%10.08
2	Germany	5	%18.52	3	%11.11	4	%14.82	14	%51.85	1	%3.70	27	%11.43
3	Pakistan	1	%6.67	5	%33.33	1	%6.66	4	%26.67	4	%26.67	15	%6.30
4	Egypt	1	%16.66	3	%50.00	1	%16.67	1	%16.67	0	%0	6	%2.52
5	Australia	3	%15.79	6	%31.58	2	%10.53	5	%26.32	3	%15.78	19	%7.97
6	France	4	%22.22	4	%22.22	2	%11.11	5	%27.78	3	%16.67	18	%7.56
7	Argentina	1	%9.09	4	%36.36	2	%18.18	4	%36.37	0	%0	11	%4.61
8	Spain	3	%33.34	2	%22.22	1	%11.11	3	%33.33	0	%0	9	%3.73
9	Netherlands	8	%30.77	6	%23.08	4	%15.38	7	%26.92	1	%3.85	26	%10.91
10	South Korea	3	%18.75	6	%37.50	2	%12.50	4	%25.00	1	%6.25	16	%6.72
11	India	2	%13.33	6	%40.00	1	%6.66	4	%26.67	2	%13.34	15	%6.30
12	Canada	2	%25.00	4	%50.00	1	%12.50	1	%12.50	0	%0	8	%3.36
13	Malaysia	3	%20.00	6	%40.00	1	%6.66	4	%26.67	1	%6.66	15	%6.30
14	New Zealand	2	%16.67	5	%41.67	1	%8.33	3	%25.00	1	%8.33	12	%5.03
15	South Africa	1	%25.00	2	%50.00	0	%0	1	%25.00	0	%0	4	%1.68
16	England	4	%30.77	6	%46.15	1	%7.69	2	%15.39	0	%0	13	%5.46
	Total	47	%19.75	74	%31.09	28	%11.77	68	%28.57	21	%8.82	238	%100

Table (1) shows that the German team has the biggest number of scored goals, as it scored (27) goals by percentage (11.43%), while the team of South Africa had the least goals as it scored only (4) by percentage (1.68%).

The researcher clarifies that the reason behind the

supremacy of the German team in scoring goals is that the German players play what is called the "comprehensive Hockey" which depends on all play positions, also because they participate in several training camps around the year which make them coherent with each other in the

playground, and qualifies them to seize the opportunities and penalties available to them in scoring the goals. This is what table (1) shows, as its results indicating that the German team has the biggest number in scoring goals in the championship, as it scored (27) goals; (19) of them from different penalties, and (8) goals from free play.

The researcher also attributes the reason why the South African team was in the last place in scoring goals – as it scored (4) goals only in the whole championship – that its

players lack the excellence of skills performance specially under pressure from the rival. They also do not take good positions in the playground generally and in front of the goal of the rival team when attacking in particular. They also don't have a clear tactic either in attack or defense during the matches. Players depend on improvising inside the playground when handling the ball; moreover, its attack players during the attacks are fewer in comparison with the defense players of the rival team.

**Table (2)**  
**Number of goals scored from free play via (team tactical performance, individual performance) from different playing areas and its percentage for all the teams N= 44**

No.	Variables	Number of goals scored	percentage
<b>1</b>	<b>Methods of team tactical performance:</b>		
<b>A</b>	<b>Attack from the right side:</b>		
	- Situation (2) against (1) then entering the ball in the (16) yards area.	4	% 3.31
	- Situation (3) against (2) then entering the ball in the (16) yards area.	3	% 2.48
	- Wide balls.	17	% 14.05
	<b>Total</b>	24	% 19.84
<b>B</b>	<b>Attack from the middle:</b>		
	- Situation (2) against (1) then entering the ball in the (16) yards area.	5	% 4.13
	- Situation (3) against (2) then entering the ball in the (16) yards area.	8	% 6.61
	- Wide balls.	1	%0.83
	<b>Total</b>	14	% 11.57
<b>C</b>	<b>Attack from the left side:</b>		
	- Situation (2) against (1) then entering the ball in the (16) yards area.	3	% 2.48
	- Situation (3) against (2) then entering the ball in the (16) yards area.	1	%0.83
	- Wide balls.	5	%4.13
	<b>Total</b>	9	%7.44
	<b>Total goals of team tactical performance</b>	47	%38.85
<b>2</b>	<b>Methods of individual performance (receiving the ball then entering with it to the (16) yards area and scoring a goal):</b>		
<b>A</b>	<i>The individual performance from the right.</i>	36	%29.75
<b>B</b>	<i>The individual performance from the middle.</i>	25	% 20.66
<b>C</b>	<i>The individual performance from the left.</i>	13	% 10.74
	<b>Total goals of individual performance</b>	74	% 61.15
	<b>Overall Total goals of team tactical performance &amp; individual performance methods</b>	121	%100

Table (2) shows the following:

- (47) goals were scored (38.85%), the most scored though the team tactical goals were from right side performance by percentage attack, as (24) goals were

scored by percentage (19.84%), while the least scored goals were from left side attack, as (9) goals were scored by percentage (7.44%).

- (74) goals were scored though the individual performance by percentage (61.15%), the most scored goals were from the right side, as (36) goals were scored by percentage (29.75%), while the least scored goals were from the left side, as (13) goals were scored by percentage (10.74%). The researcher sees the reason that the right side attack occupies the first place either in the team tactical performance or the individual performance in scoring goals is that the right side attack is stronger in case of attack, as the attack player plays on the (reverse stick) of the defender, consequently, the defender's opportunity to get the ball from the attack player becomes weak. Therefore, most teams in the world attack from the right side. In addition, there might be another tactical aim which is to force the rival team to defend from its left side; consequently, the attack from the right side of the rival team becomes weak.

The researcher also attributes the reason that the attack from the middle occupies the second place in scoring goals either through the team tactical performance or the individual performance to that most of the teams tend to penetrate from the middle as they depend on the skilled players who try to pass from the middle in order to score goals or score penalties through which goals can be scored later. In addition, the lack of good defensive positions of the defenders in front of the goal which is an evident mistake in the defense of some teams participating in the championship. As the attack from the middle becomes clear for the defenders, consequently, they should receive the attackers and don't give the opportunity to receive the ball or pass it freely after they receive it, which does not happen with the defenders of these teams where the defense player leaves the attack player to receive the ball then attacks him afterwards; which is one of the wrong principles that these defense players do.

While the researcher attributes the reason that the attack from the left side occupies the third and last place in scoring the goals either in the team tactical performance or the individual performance to that most of the teams don't prefer to attack from the left side in order to expand the attack front from the right side of the playground and on the left side of the rival team. Also because in case of cutting the ball during the attack from the left side, then the attack of the rival team will be from its right side and on the left side of the other team. In addition, the supremacy of the right defender on the left wing is easy.

The researcher sees that if the play from the left side of the playground was used either through the team tactical performance or the individual performance, and then the teams will benefit many advantages such as: the rival team won't exaggerate in the

attack from the right side where the other team will enjoy a strong left attack player who plays on the counter attack and consequently prevents the right defense player from proceeding to help midfielder and attack line players. The second advantage is to expand the attack front either from the right, the middle or the left. The third advantage is the existence of a front defense line starts from the left wing to stop forming an attack from the right side of the playground, which does not happen in some teams participating in the championship and consequently, this led to two important results which are: the first result is the lack of the advantage of defending the playground from the attack third, the second result which came from the first result is that the percentage of scoring goals from the right side of the playground is higher than from the left side.

**Table (3)**  
**Number of goals scored from free play from inside the (16) yards circle and its percentage for all the teams**

N= 44

No.	Areas of (16) yards circle	Number of scored goals	percentage
1	<i>Inside circle form the right side.</i>	57	%47.11
2	<i>Inside circle form the middle.</i>	41	%33.88
3	<i>Inside circle form the left side.</i>	23	% 19.01
<b>Total</b>		<b>121</b>	<b>% 100</b>

Table (3) shows that the highest percentage of scoring goals is for the goals from the free play from inside the (16) yards circle was from the right side, as (57) goals were scored by percentage (47.11%). Also (41) goals were scored from inside the circle from the middle by percentage (33.88%). While the least percentage of scoring goals was from the free play from inside the (16) yards circle from the left side, as (23) goals were scored by percentage (19.01%).

The researcher attributes the reason that the number of scored goals from inside the (16) yards circle from the right side and from the middle occupies the first and the second places respectively from total of the scored goals from the free play from inside the (16) yards circle to that

most of the teams participating in the championship tend to play from the right side or to penetrate from the middle. This clarifies two very important facts: the first fact is the weak left back player who is beaten by the right wing in most of the attacks. The second fact is the lack of good defensive positions of defense players outside or inside the (16) yards circle; as the defense players gather inside the circle leads the attack players to enter the circle and consequently have a larger opportunity to aim more than the opportunity available to defense players to take the ball out and distract it from the circle. Therefore, the principles of planned defense represented in the defense (5 against 4, 4 against 3, 3 against 2) should be applied, and not to depend on the random defense gathering inside the circle.



This agrees with what **Marei Hussein Marei (1991)** (1) reached that the European method takes special interest in the right side of the playground especially in the individual penetration attempts. Also, that the center of the right wing is

the most important and successful places in penetrating the (25) yards area of the rival. In addition, that the wide passes from the right side area are easier in performing the direct aiming on the goal.

**Table (4)**  
**Number of goals scored by different lines' players from the free play & the free hits and its percentage for all the teams**

**N= 44**

No.	Players' positions	Number of scored goals	percentage
1	<i>Attack players.</i>	87	% 58.39
2	<i>Midfield players.</i>	41	% 27.52
3	<i>Defense players.</i>	21	% 14.09
<b>Total</b>		<b>149</b>	<b>% 100</b>

Table (4) shows that attack players are the most scoring goals as they scored (87) goals by percentage (58.39%), followed by midfield players as they scored (41) goals by percentage (27.52%), and at last defense players as they scored (21) goals by percentage (14.09%).

The researcher attributes the reason that the attack players are the most scoring goals despite the close observation to that the attack player previously knows along with his colleagues the plan and the moves agreed upon so

he has the surprise advantage against his rival. Also his moves towards the defense player starts first then are accompanied by the defense player's reaction toward the action. Moreover, the attack player often enjoys higher skills than the defense. Also neglecting the principle of close observation of the attack player leads to make him able to receive the ball then score the goal or handle the ball freely.

The researcher also attributes the reason that the midfield players occupy the

second place in scoring the goals to that the midfield players come from the back so they are not observed and consequently they are free to receive the ball and to aim and then to score the goal, this reminds us that the coaches' neglecting the principle of observation and the defense tactical performance lead to giving the rival team the opportunity to score goals.

The researcher indicates the reason that the defense

players occupy the last place in scoring goals is that the coaches of some teams give directions for defense players to stay in their defensive positions and do not proceed to the front to perform their offensive roles fearing that the rival team will make counter attacks and score goals against his team. Consequently, when defense players score goals they often become from aiming from the short corner hits or the penalty hits.

**Table (5)**  
**Number of goals scored through different skills**  
**and its percentage for all teams**

**N= 44**

<b>No.</b>	<b>Skills used in scoring goals</b>	<b>Number of scored goals</b>	<b>percentage</b>
<b>1</b>	<i>Via the push.</i>	<b>32</b>	<b>% 13.45</b>
<b>2</b>	<i>Via the hit.</i>	<b>87</b>	<b>%36.56</b>
<b>3</b>	<i>Via the flick.</i>	<b>59</b>	<b>% 24.79</b>
<b>4</b>	<i>Via the scoop.</i>	<b>7</b>	<b>% 2.94</b>
<b>5</b>	<i>Via the sweep.</i>	<b>20</b>	<b>% 8.40</b>
<b>6</b>	<i>Via the reverse push.</i>	<b>9</b>	<b>% 3.78</b>
<b>7</b>	<i>Via the reverse Hit.</i>	<b>24</b>	<b>% 10.08</b>
<b>Total</b>		<b>238</b>	<b>% 100</b>

Table (5) shows that the ball hit skill is the most used skill in scoring goals as it was used in scoring (87) goals by percentage (36.56%), followed by ball flick skill as it was used in scoring (59) goals by

percentage (24.79%), while the ball scoop was the least used skill to score goals as it was used in scoring (7) goals by percentage (2.94%).

The researcher attributes the reason that the ball hit skill

occupies the first place in scoring goals to that it is considered the first attack skill in the Hockey sport because when performing it, it gives the ball strength and speed so that it becomes difficult for the goalkeeper to stop it, hence many goals are scored by using it. Also, considering the ball strength and speed when performing this skill, it might touch the defense player, or the goalkeeper stick or even any colleague's stick and enter the goal box or change its direction and enters the goal box; which may not be available in some other skills.

The researcher also clarifies the reason that ball flick skill occupies the second place in scoring goals to the fact that it is considered one of the important skills that is commonly used in aiming on

the goal box when performing the short corner hit or the penalty hit, as some players prefer to play the ball high when performing the penalty hit. In addition, it is used to make the follow-up especially in front of the goal box when the goalkeeper is lying on the ground.

The researcher attributes the reason that the ball scoop skill occupies the last place in scoring the goals to that it is not used a lot during the matches.

This result agrees with what **Mohammed Ahmed Abdullah (1992) (2)** concluded that the most used skill in aiming is the ball hit skill, followed by the ball flick skill.

**Second: Display & Discussion of Results related to the Technical Analysis of the German Team:**

**Table (6)**  
**The team plans according to its repeated use**  
**and its percentage of the German Team**

**N= 6**

No.	Team tactical movements	Repetitions	percentage
1	Team plans with (6) players movements.	70	%18.42
2	Team plans with (5) players movements.	40	% 10.53
3	Team plans with (4) players movements.	36	% 9.47
4	Team plans with (3) players movements.	31	% 8.16
5	Team plans through the situation (2 against 1).	84	%22.11
6	Team plans through the situation (3 against 2).	68	% 17.89
7	Team plans through the situation (4 against 3).	51	% 13.42
Total		380	% 100

Table (6) shows that the most used team plans are the team plans through the position (2 against 1), as it was performed (84) times by percentage (22.11%), while the least used team plans were the team plans through the moves of (3) players as they were performed (31) times by percentage (8.16%).

The researcher sees that the reason that the team plans through the position (2 against 1) occupies the first place in repetition times that the German team uses the modern

tactic principles which depends always on creating situations in which the attack players outnumber the defense players, that is why they always depended on using the situations (2 against 1, 3 against 2, 4 against 3) as applying these situations depend on the tactical awareness and the high physical fitness beside the movements of the rest of the alert team between different play lines (defense, middle, attack). For example, you may find center forward (C.F) helps

a right wing (R.W) when attacking the left back (L.B), thus creating a situation (2 against 1) in the rest of play situations. Applying these situations is aimed to distract the attention of the defense player besides creating a substitute situation for the attack player who possesses the ball. For example, when the right wing (R.W) attacks the left back (L.B) it is a situation (1 against 1) where the victory will be either for the attack player or the defense player as the opportunity becomes equal considering each of them enjoys a high skill, but when the center forward (C.F) comes to help the right wing (R.W) this distracts the attention of the defense player, and if he attacked him then there will be an opportunity for the right wing (R.W) to pass the ball to center forward (C.F). Hence, the winner will be the attack players or the other lines players' defense or attack if they mastered these situations. It is the same thing when using other situations (3 against 2, 4 against 3).

The researcher also attributes the reason that the team plans with (3) players'

movements occupies the last place in repetition times, that the German team plays with (3-3-3-1) plan in most of its matches, which is an integrated tactical performance specially between 3 midfielders and 3 attack players from after the middle of the playground or from inside the (25) yards area. Most of the attacks are played with the moves of (6) players, and few of them are played with the moves of (3) players especially in the counter attacks where the team depends on the attack line triangle only.

This agrees with what **Taha Ismail, Omar Abul-Majd and Ibraheem Sha'lan (2002)** referred to that the modern tactical performance depends generally on the direct team play, also the quick handle and decision taking in the situations which the players face during the match time. (3: 89)

This result also agrees with the study of **Hosni Mohammed Ezzeldin (1988) (4)** in which he recommended to pay attention to the players' movements and also the tactical phrases which suit the way of play.

**Table (7)**  
**Passes according to repeated use and its percentage of the German team**

**N= 6**

<b>No.</b>	<b>Passes</b>	<b>Repetitions</b>	<b>percentage</b>
1	Long passes.	46	%14.20
2	Short passes.	94	%29.01
3	Medium passes.	61	%18.83
4	Wide passes.	35	%10.80
5	Angle passes.	27	%8.33
6	High long passes.	40	%12.35
7	High medium passes.	21	%6.48
Total		324	%100

Tale (7) shows that the most used passes are the short ones, as they were used (94) times by percentage (29.01%), followed by the medium passes as they were used (61) times by percentage (18.83%), while the least used passes were the high medium passes as they were used (21) times by percentage (6.48%),

The researcher attributes the reason that the short passes occupy the first place in repeated use to the German team's way of performance during the matches as the distance between the players is close. In addition, they apply the tactics' situations (2 against 1, 3 against 2, 4 against 3) to give the player who possesses the ball two solutions; either to try to pass from the competitor

or to pass the ball to his colleague instead of one solution which is to try to pass from the competitor. This way of performance suits well the use of short passes. Besides, the German team depends on play, touch and game plans and the tactical movements.

The researcher also clarifies that the reason the medium passes occupy the second place in repeated use is due to the tactical performance method of the German team concerning play directions (play sway) which means transferring the ball (either from the right to the middle then to the left, or the contrary from the left then to the middle then to the right), this suits the use of medium passes.

The researcher also sees the reason that the high medium passes occupy the last place in repeated use is due to what was mentioned previously; that the German team depends on the tactical movements and narrowing the distance between players and the pressure on the competitor, which results in using the short and medium passes, and

decrease the dependence on long and high medium balls except in the urgent cases such as the counter attack and play transfer.

This result agrees with what **Marei Hussein Marei (1991) (1)** concluded that the most used kinds of pass inside the (25) yards area is the short pass.

**Table (8)**  
**Defensive Methods, Movements and Situations according to its repeated use and its percentage of the German team**

**N= 6**

No.	Defensive Methods, Movements, and Situations	Repetitions	percentage
1	Defensive methods:		
a	Man to man observation method.	18	%5.44
b	Man to position observation method	54	%16.31
2	Defensive movements:		
a	Attack players moving back to defense from after the (16) yards area.	74	%22.36
b	Attack players moving back to defense from after the (25) yards area.	27	%8.16
3	Defensive situations:		
a	(2 against 1).	60	%18.13
b	(3 against 2).	40	%12.08
c	(4 against 3).	34	%10.27
d	(5 against 4).	24	%7.25
Total		331	%100

Table (8) shows that the most used defensive method is the defensive observation (Man to position) as it was used (54) times by percentage (16.31%), and the most used defensive movements are {the attack players' movements to defend

from after the (16) yards area} as they were used (74) times by percentage (22.36%), while the most used defensive situation was the situation (2 against 1) as it was used (60) times by percentage (18.13%).

The researcher attributes the reason that German players use the observation method (Man to position) as a defensive method more than the (man to man) method is that the German players get free from their positions inside the playground, which for example enables the center forward (C.F) to play in the place of the right Midfielder (R.M) during the defense, hence they are not tied to certain positions.

The researcher also explains why the least repetition percentage of defensive methods of the German team was for the observation method (Man to man), as this clearly expresses the German players dependence on applying the plan principles of the defensive situations of which the situation (2 against 1) where defense players outnumber the attack players of the competitor team, which suits the defense situations analysis of the German team.

The researcher sees the reason that the Attack players moving back to defense from after the (16) yards area obtained the highest repetition number of the defensive

movements for the German team, that the attack players of the German team do their defensive tactical duties in order to help in the defense, as it is known that the best way to defend is to attack. And it is known also that attack line is considered the first defense line which if succeeded to stop the attack from the other team playground then it won two advantages; the first is (to stop the attack against it), and the second advantage is (to begin an attack for his favor). This also expresses the comprehensive tactical performance between the players of the 3 playground lines, as the triangle of the attack line helps the triangle of the midfield line during the defense. Consequently, they perform their defensive role after they performed their attack role.

The researcher also sees that the previous table indicates the increase of repetition percentage in the defensive situation (2 against 1) which is a reflection of the same tactical principle that the defense players are more than the attack players. When attacking the player who possesses the ball with two players, it is often



either to have the ball or to hinder the attack in order to help the rest of the colleagues to return and cover or to stop the attack by considering it a free hit for the competitor team.

This result agrees what **Wade Allen (2002)** indicated that the most suitable defensive observation is the outnumbering of defense players more than the attack

players and to attempt to execute this in all parts of the playground. (5: 64)

This result also agrees with what **Mohamed Talaat Abu Elmatei (1997) (6)** referred to that the individual defensive means represent in (choosing the suitable place for defense, observation, attack, goalkeeper plans) while the team defensive means in (cover, defense organization).

**Table (9)**

**The penalties which the German team got through the team performance and the individual performance inside the (25) yards' area and its percentage**

**N= 6**

No.	Variables	Repetitions	percentage
1	Team performance inside the (25) yards area led to getting the following penalties:		
a	Free hit.	42	%38.53
b	Short corner hit.	3	%2.75
c	Corner hit.	18	%16.51
	Total	63	%57.79
2	Individual performance inside the (25) yards area led to getting the following penalties:		
a	Free hit.	33	%30.28
b	Short corner hit.	5	%4.59
c	Corner hit.	8	%7.34
	Total	46	%42.21
	Overall Total of variables	109	%100

Table (9) shows the following:

- The team performance inside the (25) yards area resulted in getting (63) penalties by percentage (57.79%), while the individual performance inside the (25) yards area resulted in getting (46) penalties by percentage (42.21%).

- The highest number of penalties inside the (25) yards was in favor of the free hit in the team & individual performances, as (42) penalties – free hit – were recorded through the team performance by percentage (38.53%), while (33) penalties – free hit – were recorded through the individual performance by percentage (30.28%).

The researcher explains the reason that the German team got a number of penalties inside the (25) yards through the team performance higher than those got through the individual play, so the team does not resort to individual solutions except in the situations which necessitate that.

The researcher attributes the reason behind the high percentage of getting free hit

penalty more than the other penalties for the German team in the team performance and the individual performance, to that the defense players of the competing team gather in front of their goal, consequently, the players of the German team become free to transfer the ball to the place empty from the defense players in order to attempt to penetrate the aiming circle, as the German players aim to perform the following: for example, to get a free hit from the right of the circle and consequently, the defense players will gather in front of their goal in order to prevent the ball to enter the aiming circle. In the same time, the German players tend to play the ball from the right then to the middle then to the left (playground sway) to the advanced player from the back to the front (unobserved) or to the player who can run from the defense player. Consequently, when moving the defense players to the other side, this cause loops in the defense, hence this make it easier to get other penalties especially the short corner hit.

**Table (10)**  
**Ball possession time and its percentage for the German team**  
**N= 6**

No.	Matches	Match time	Possession time	Percentage
1	Group (A)	1 <sup>st</sup> match (Germany x Belgium).	(70) min.	(30) min. %16.22
2		2 <sup>nd</sup> match (Germany x Pakistan.)	(70) min.	(34) min. %18.38
3		3 <sup>rd</sup> match (Germany x Egypt).	(70) min.	(40) min. %21.62
4	Round (8)	4 <sup>th</sup> match (Germany x Australia).	(70) min.	(27) min. %14.59
5	Round (4)	5 <sup>th</sup> match (Germany x Netherlands).	(70) min.	(29) min. %15.68
6	Final	6 <sup>th</sup> match (Germany x France).	(70) min.	(25) min. %13.51
<b>Total</b>				(185) min. %100

Table (10) shows that the biggest ball possession time was (40) minutes, and was in the match (Germany x Egypt) by percentage (21.62%), while the shortest ball possession time was (25) minutes and was in the match of (Germany x France) by percentage (13.51%).

The researcher sees that the short ball possession time for the German team in all its matches in the championship generally – as it was in the highest match (40) minutes, and in the lowest match (25) minutes from (70) minutes which is the time of the

Hockey match – returns to the many penalties the German team got in the whole championship. This also explains that when the German players possess the ball, all the other teams work to atop the attack through the free hits through the whole playground. Consequently, when counting the legal foul and getting the ball – especially if the ball went outside the playground – then play it, all of this leads to time waste. In addition, when counting the short corner hit either for the German team or for the competing team, the shot corner hit is played after

about from (15 – 25) seconds when all the players are standing in their positions which leads to more waste of time. Also, some teams which play against the German team work hard to keep the ball for the longest time possible (time consuming) and play on the counter attacks which lead to consume a long time. Moreover, this championship is considered the strongest international championship for this age stage, and includes teams of high level such as France, Netherlands and Australia, which was a rival to

the German team, which is expressed by the ball possession time with these teams in the previous table.

According to the Judging rules of the Hockey sport, the diverse mistakes require after they are counted legal conditions to be replayed, as the players of the competing team should be away for a distance not less than (5) meters from the ball, also replaying the ball should be from the place where the mistake happened. All of this affect the missing time from the match. (7: 32)

**Table (11)**  
**Number of goals and ways of scoring and its percentage for the German team**

**N= 6**

<b>No.</b>	<b>Methods of scoring goals</b>	<b>Number</b>	<b>percentage</b>
<b>1</b>	<i>Free play goals.</i>	<b>8</b>	<b>%29.63</b>
<b>2</b>	<i>Different penalties goals:</i>		
<b>a</b>	<i>From the short corner hit.</i>	<b>14</b>	<b>%51.85</b>
<b>b</b>	<i>Form the free hit.</i>	<b>4</b>	<b>%14.82</b>
<b>c</b>	<i>From the penalty.</i>	<b>1</b>	<b>%3.70</b>
<b>Total</b>		<b>27</b>	<b>%100</b>

Table (11) shows that the highest number of goals scored was from the short corner hit, as (14) goals were scored by percentage (51.85%), followed by the goals from the free play, as (8) goals were scored by percentage (29.63%), while the

least number of goals scored was from the penalty hit, as (1) goal was scored by percentage (3.70%).

The researcher attributes the reason behind the increase of goals number which the German team scored from the

free play to that the German players are good at the tactical solutions, when the competing players gather for defense in front of their goal box they tend to deliberately get a legal penalty though which they can score a goal. As they attempt to weaken the defense as it is the way when scoring goals from the free hit or the dependence on the short corner hit, as the German players perform it with (7) players against (4) defense players and a goalkeeper. Consequently, the dominance will be to the attack players of the German team either from applying the direct short corner hit or through the follow-up after aiming.

### **Conclusions:**

#### **First: the conclusions related to goals analysis of all World Cup Championship's matches:**

1- The German team is the most scoring goals, as it scored (27) goals by percentage (11.43%), while the South African team is the least scoring goals as it scored only (4) goals by percentage (1.68%).

2- (47) Goals were scored from free play through the team tactical performance by percentage (38.85%), while

(74) goals were scored through the individual performance by percentage (61.15%).

3- (57) Goals were scored from free play inside the (16) yards circle from the right side by percentage (47.11%), and (41) goals were scored from inside the (16) yards from the middle by percentage (33.88%), while (23) goals were scored from inside the (16) yards circle from the left side by percentage (19.01%).

4- Attack players scored (87) goals by percentage (58.39%), and midfielders scored (41) goals by percentage (27.52%), while the defense players scored (21) goals by percentage (14.09%).

5- The most used skills in the scoring goals is the ball hit skill, as it was used to score (87) goals by percentage (36.56%), while the ball scoop skill was the least used skill in scoring goals, as it was used in scoring (7) goals by percentage (2.94%).

#### **Second: the conclusions related to technical performance analysis for the German team:**

1- The most used team plans was the team plans through the situation (2 against 1), as it was performed (84) times by

percentage (22.11%). And the least used team plans was the team plans through the (3) players' movements, as it was performed (31) times by percentage (8.16%).

2- The most used passes were the short passes, as they were used (94) times by percentage (29.01%), and the least used passes were the high medium passes as they were used (21) times by percentage (6.48%).

3- The most used defensive methods, movements and situations was the observation method (Man to position), as it was performed (54) times by percentage (16.31%), and the most used defensive movements were {attack players moving back to defense from after the (16) yards area}, as it were performed (74) times by percentage (22.36%), while the most used defensive situations was the situation (2 against 1), as it was used (60) times by percentage (18.13%).

4- The team performance inside the (25) yards area resulted in getting (63) penalties by percentage (57.79%), while the individual performance inside the (25) area resulted in getting (46) penalties by percentage (42.21%).

5- The longest ball possession time from the match time was (40) minutes by percentage (21.62%), while the least ball possession time from the match time was (25) minutes by percentage (13.51%).

6- The highest number of goals scored was from the short corner hit, as (14) goals were scored by percentage (51.85%), while the lowest number of goals scored from the penalty hit, as (1) goal was scored by percentage (3.70%).

#### **Recommendations:**

1- To analyze the technical performance of the Egyptian junior team under (21) and to compare it with the technical performance of the German junior team under (21) years.

2- To pay attention to training on exploitation from the different penalties inside the (25) and the (16) areas in scoring goals.

3- To pay attention to train the players on similar situations to that which happen in the matches such as (playing under pressure, the counter attack, the outnumbering during the attack or the defense).

4- To pay attention to train the attack players on performing their defensive

roles from the team attack triangle in order to stop the attacks of the competing team.

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