



**FINAL SEMINAR & HIGH PERFORMANCE  
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**Free Hit in Attacking 23:  
Development of Playing  
Methods & Effectiveness  
for Circle Penetration**

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## 1.0 INTRODUCTION

FIH Rules Board introduced the new rule with regards to free hits and this became a mandatory experimental rule from 1 May 2009. The Men's Asia Cup and Men's Junior World Cup were the first tournaments being used to test this new rule.

The implementation of this new rule has changed the way teams take to the approach to penetrate into the opposition circle whenever an infringement occurs and a free hit is awarded in the attacking 23. It also has altered the way teams utilize side line hits within the 23m area including long corners. The purpose of this study is to recognize the development of playing methods for circle entries. I am also interested to establish the effectiveness of each method and how this can benefit and improve high performance coaching in the future.

## 2.0 NEW RULE ON FREE HITS IN ATTACKING 23

### 13.2 Mandatory Experimental Rule

*Procedures for taking a free hit, centre pass and putting the ball back into play after it has been outside the field:*

- h** from a free hit awarded to the attack within the 23 meters area, the ball must not be played into the circle until it has travelled at least 5 meters or has been touched by a player of either team other than the player taking the free hit.*

*If the player taking the free hit continues to play the ball (i.e. no other player had played it):*

- that player may play the ball any number of times, but*
- the ball must travel at least 5 meters, before*
- that player plays the ball into the circle by hitting or pushing the ball again.*

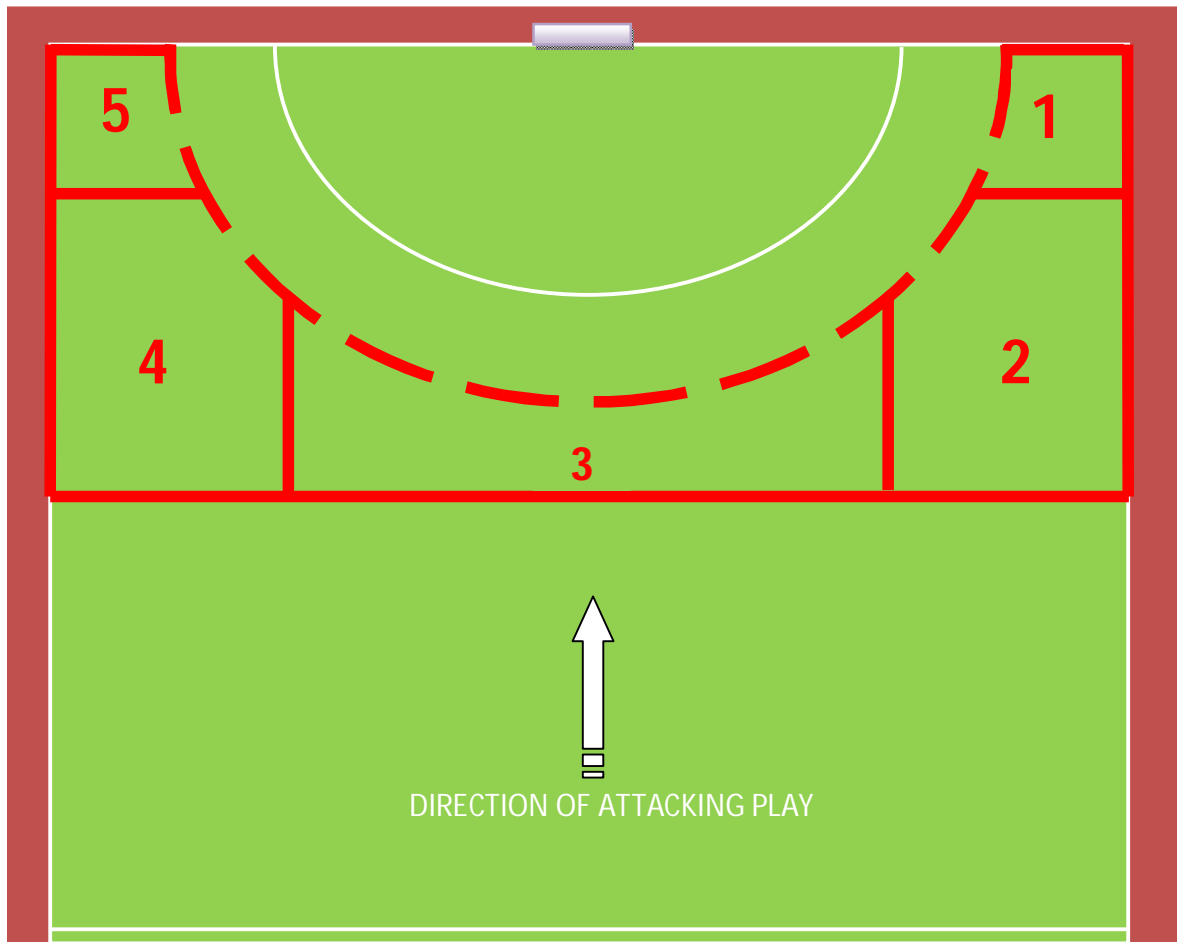
*Alternatively:*

- another player of either team who can legitimately play the ball must deflect, hit or push the ball before it enters the circle, or*
- after this player has touched the ball, it can be played into the circle by any other player including the player who took the free hit.*

## 3.0 STUDY AREA DEFINITION

Under the new rule, free hits awarded in areas close to the circle will now have to be taken on the dotted line, eliminating the possibility of play being initiated in areas between the circle and dotted line.

To facilitate analysis of data for this study, the final quarter has been divided into 5 zones where free hits occur. Free hits awarded in Zone 1 & 5 will include long corners.



#### 4.0 STUDY MATERIAL

I have selected the 6 teams featured in the Champions Trophy (CT) 2009 which incidentally have also finished in the top 6 position in the World Cup (WC) 2010 to obtain statistical findings on the playing methods that evolved from the enforcement of the new rule. These matches will give us an idea of how top teams have developed their tactical play of ball possession close to opposition D over 2 major competitions within three months. Two matches for each team against different opposition were chosen in both competitions so as to provide a cross section of teams from different continents with variety of playing style under different tournament environment. Having the same teams for analysis from the two competitions will also provide some form of consistency in the data gathered which will help to draw useful conclusion for high performance coaching. That remains the primary objective of this study.

<b>Matches from Champions Trophy 2009</b>	<b>Final Standing</b>
1. Germany v Korea 2. Germany v Netherlands 3. Spain v England 4. Spain v Netherlands 5. Australia v Korea 6. Australia v England	1. Australia 2. Germany 3. Korea 4. Netherlands 5. Spain 6. England

<b>Matches from World Cup 2010</b>	<b>Final Standing</b>
1. Germany v Australia 2. Germany v England 3. Spain v Australia 4. Spain v Korea 5. Netherlands v England 6. Netherlands v Korea	1. Australia 2. Germany 3. Netherlands 4. England 5. Spain 6. Korea

## 5.0 DEFINITION OF PLAYING METHOD & OUTCOME

The new rule has eliminated direct hits into the circle whenever a free hit is awarded inside the 23m area. The ball is now required to travel 5m or more before being played into the circle. Teams have to devise new methods and plans to progress into the opposition circle and from the analysis of the selected matches, I have summarized the following obvious modes of play emerging as the result of this new rule.

<b>METHOD</b>	<b>DEFINITION</b>
<b>Short passes &amp; eliminations</b>	Attempts to get into the circle by lone elimination using the 'self pass' rule or series of short passes between players. These 2 plays are different yet so closely interconnected and usually executed in one swift movement, therefore it is only logical to combine them under one heading.
<b>Hits into D after 5m</b>	Hard hit into the circle after the ball has travelled 5m or more either by the individual player carrying the ball or after limited number of passes between players. Usually executed with the intention for deflection at goal or anticipation for defensive errors which could lead to penalty corners and possibly goal scoring opportunities.
<b>Transfer play</b>	Attempts to play the ball out of crowded zone to the 'help side' where space is available for attacking opportunities. Limited number of passes with precision and good ball pace is the key for the play to be successful.

<b>Deflection pass into D</b>	One touch pass to change the direction of ball into the circle. Initial quick movement from the deflector towards ball carrier is the element of surprise to catch the opposition defense off guard. It requires pre planned movement of ball and players with timing of lead, pace of ball and direction of the initial pass being the crucial components for successful execution. Others strikers are well positioned and alert to latch on to the deflected pass for goal scoring opportunities.
<b>Others</b>	Any other play not defined above usually revolves around the ball being played out of crowded zone back into defense for another build up play to commence.

From these various methods to progress into opposition circle there were 3 obvious outcomes observed.

<b>OUTCOME</b>	<b>DEFINITION</b>
<b>Successful circle penetration</b>	<p>Ball progression into the circle is considered successful when</p> <ul style="list-style-type: none"> <li>• an attacker has full control of the ball moving into the circle</li> <li>• there is an attempt at goal i.e. goal shot or deflection</li> <li>• a penalty corner is awarded</li> <li>• a penalty stroke is awarded</li> <li>• a goal is scored</li> </ul>
<b>Retain possession</b>	When the attacking team manages to retain ball possession by winning another free hit or awarded a side line hit or long corner.
<b>Unsuccessful circle penetration</b>	<p>The following is regarded as unsuccessful attempts to penetrate into the circle</p> <ul style="list-style-type: none"> <li>• skill errors by the attackers resulting in free hits for the defending team</li> <li>• skill errors by the attackers resulting in dynamic turnovers for the defending team</li> <li>• misdirected pass that goes out of play</li> <li>• dispossession i.e. tackles or interceptions by the defending team</li> </ul>

## 6.0 RESEARCH DATA AND INTERPRETATION

### DISTRIBUTION OF FREE HITS BY ZONE AND PLAY

METHOD ZONE	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Total
Short passes & eliminations	118	88	18	50	91	365
Hits into D after 5m	35	22	9	23	19	108
Transfer play	12	14	-	20	12	58
Deflection pass into D	6	3	6	4	1	20
Others	27	15	4	26	17	89
<b>Total</b>	<b>198</b>	<b>142</b>	<b>37</b>	<b>123</b>	<b>140</b>	<b>640</b>

### DISTRIBUTION OF OUTCOME BY ZONE AND PLAY

METHOD ZONE	Zone 1			Zone 2			Zone 3			Zone 4			Zone 5			Total		
	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×
Short passes and eliminations	11	52	55	13	33	42	8	1	9	8	19	23	15	28	48	55	133	177
Hits into D after 5m	6	4	25	3	4	15	4	2	3	5	7	11	4	6	9	22	23	63
Transfer play	-	6	6	2	3	9	-	-	-	4	6	10	4	1	7	10	16	32
Deflection pass into D	3	-	3	-	2	1	2	-	4	-	1	3	-	1	-	5	4	11
Others	6	6	15	1	2	12	2	1	1	1	5	20	1	6	10	11	20	58
<b>Total</b>	<b>198</b>			<b>142</b>			<b>37</b>			<b>123</b>			<b>140</b>			<b>640</b>		

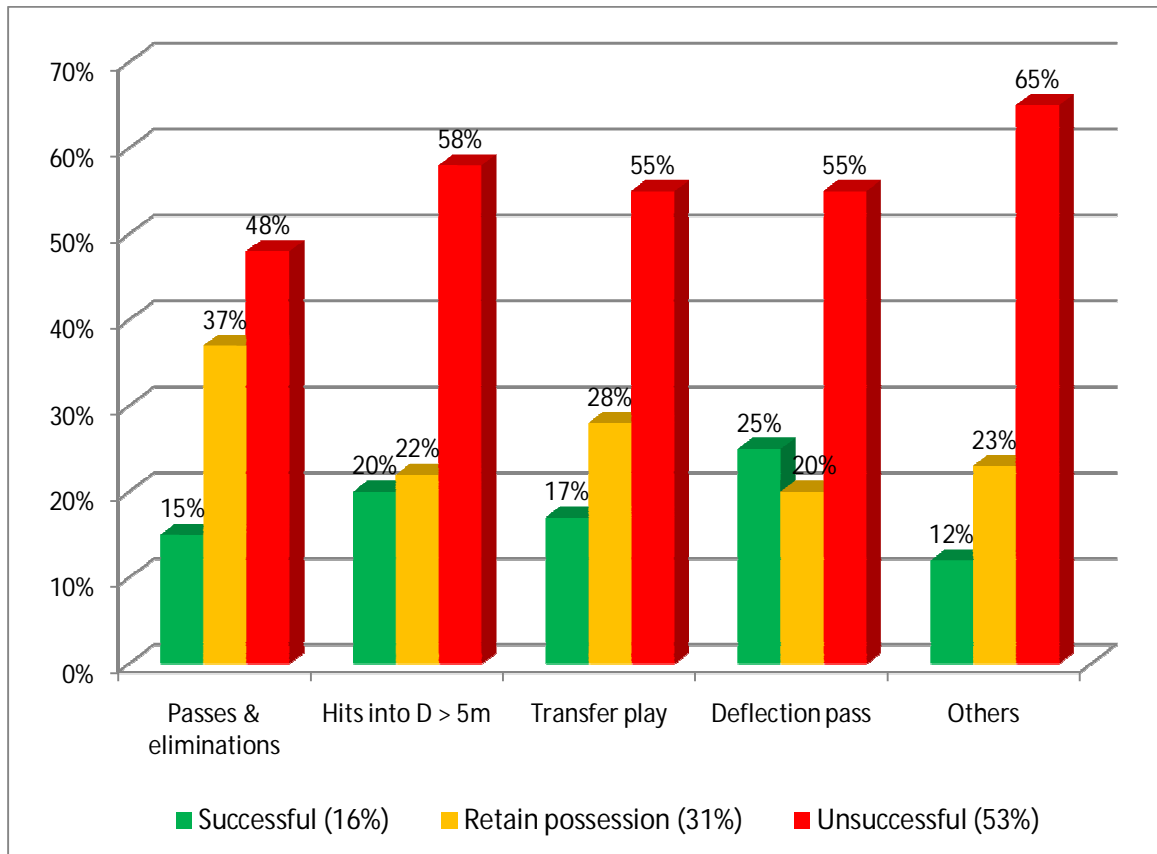
√ successful circle penetrations

= retain possession

× unsuccessful circle penetrations

### Key points:

- 1) The overall success rate for circle penetration utilizing all the playing methods accounts for only 16% with the ability to retain possession at 31% and unsuccessful attempts or loss of possession to the opposition at 53%. Outcome by play in percentages is summarized below in a chart followed by an analysis of the playing methods and its effectiveness for circle penetration.



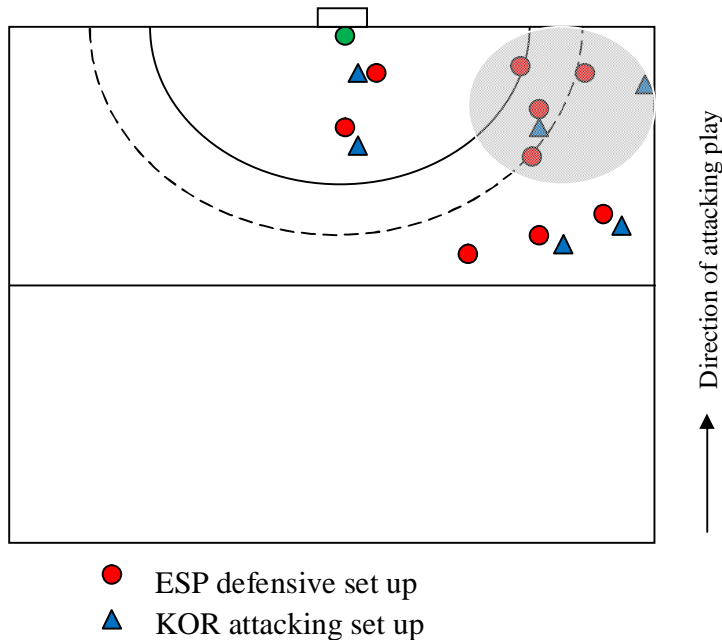
- a) Teams resort to short passes and eliminations frequently whenever a free hit is awarded in the 23m area. It is no surprise that it recorded the most number of hits in all the zones totaling 365 attempts or 57% of total free hits awarded. However its success rate is quite low at only 15% (the 2<sup>nd</sup> lowest after 'others') with 48% of these efforts were well defended by the opposition.

In Zone 1 and 5, there were 209/640 attempts to get into the circle by short passes and eliminations. One of the primary reasons is that defensive teams 'encourage' this type of play by cutting out outlet pass for any transfers out of the zone. In this small playing area, the defenders usually outnumber the attackers thus the prospect of regaining possession is greater. The other reason I suspect is the mentality of strikers in these zones as they are attracted by the short distance to opposition circle and are prepared to take the risk and go for broke. They have the confidence and a high skill level to take on defenders even in enclosed area of play. The execution of '3D' skills and good understanding between



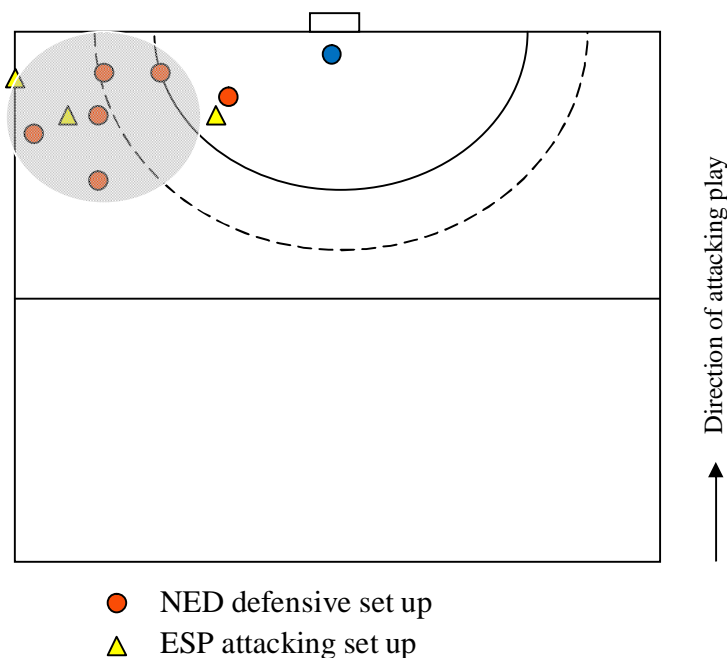
strikers for exchanges of passes will enhance the chances for successful circle penetrations.

### Illustrations of attacking and defensive set up in Zone 1 & 5



#### ***Korea v Spain (WC)***

*A typical free hit situation in Zone 1 illustrating a 4 v 2 setting where the Spanish defense secure the playing area and prevent outlet passes out of the zone. Double/triple team tackling makes it more difficult for Korean strikers to navigate their way through traffic.*

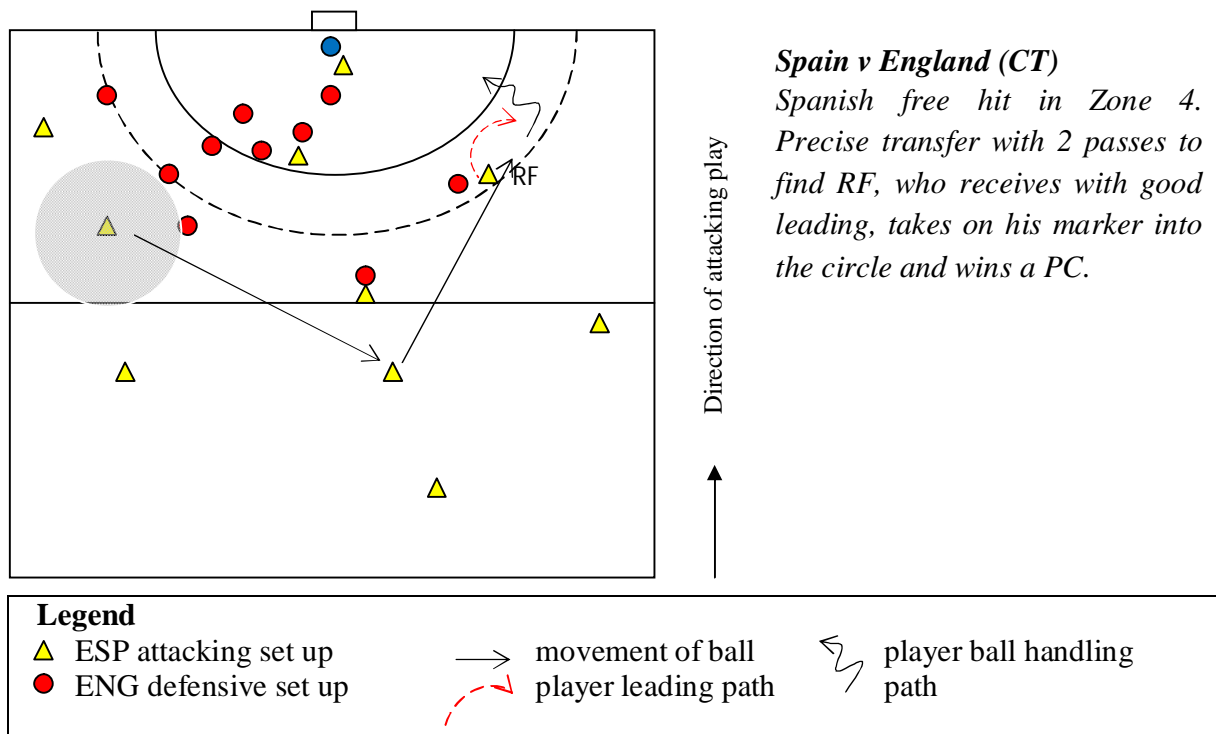


#### ***Netherlands v Spain (CT)***

*Dutch defense against Spanish free hit in Zone 5, locking in play with 5 v 2 and a high chance to regain ball possession. For Spanish strikers, it is an uphill task to eliminate the layers of defense by self elimination and passes.*

- b) The next preferred method is executing hard hits into the circle after the ball has been moved 5m or more either by the same ball carrier or by another player after receiving a pass. This is usually done with the intention of finding a teammate lurking in the circle or hoping for defensive errors which could lead to penalty corner and spill outs for shots at goal. There were 108 attempts to smash the ball into the circle and it is the 2<sup>nd</sup> most effective method at 20%. Its failure rate is also high at 58% as players tend to raise their hits especially when they rush their skill execution when closed down very quickly thereby attracting a free hit against instead. Surprisingly there were few instances of players still committing the mistake of not travelling 5m or more with the ball before hitting into the circle! The other reason for the high failure rate is these hits were well read and trapped by the defense especially when it has been played further back between the 23m and halfway line (common occurrence in Zone 2, 3 & 4). The longer playing distance makes it more difficult to penetrate the defensive line around the dotted circle in the middle channel. There were also numerous misdirected hits that go over the backline for 16' restarts.
- c) There were 58 attempts to switch play across the pitch where more space is an attraction for offensive opportunities. Zone 4 & 5 recorded more transfers than Zone 1 & 2 as teams displayed tendency to withdraw from a vulnerable position to initiate right sided attacks. When the transfer is executed with limited number of passes and with precision and pace, the strikers have ample time and space to produce some good rewards as evidenced from the success ratio of 8/32 for transfers from Zone 4 & 5 as compared to only 2/26 for transfers from Zone 1 & 2.

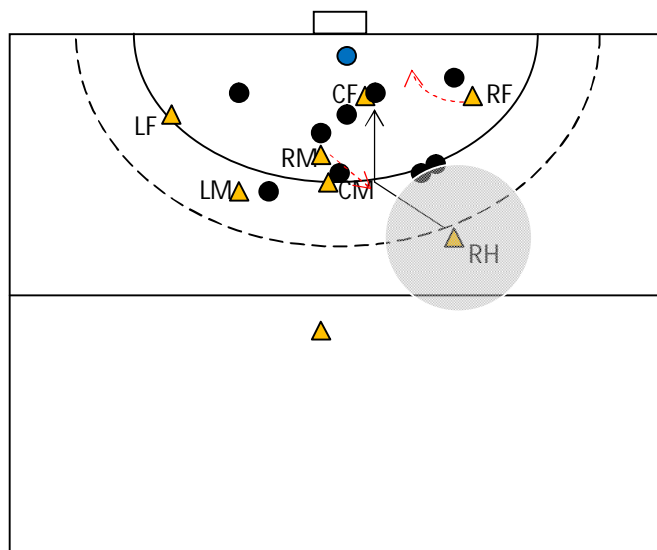
#### Illustration of an effective transfer resulting in a successful circle entry



- d) Deflection pass into D is the least used method by teams with only 20 attempts. However it produced the highest return of 25% (percentages by play) and proved to be an effective tool to get the ball into the circle when executed well. This method is a set play which requires precision and pace of pass, correct timing and direction of lead by the receiver to deflect the ball into the circle. The second part requires anticipation and astute positioning of the other strikers to pounce on the deflected ball. It is most effective when the free hit is awarded closer to the dotted circle.

Zone 1 & 3 recorded the most number of attempts for deflection pass into D with 12 out of 20 for combined success rate of 42%. The success rate for Zone 1 alone is 50%. With such a high return, high performance coaches should pay more attention and devise set plays involving deflection pass for free hits on or close to the dotted circle especially in Zone 3 with larger playing area and presenting more possibilities. The first goal scored by Australia in the World Cup final against Germany is a good example of how a deflection pass when perfectly timed and executed can be rewarding.

#### Illustration of a well executed set play utilizing the deflection pass



**Australia v Germany (WC Final)**  
Free hit for Australia in Zone 3. Sharp, diagonal lead by RM towards the ball carrier with the ball perfectly timed and directed into his forehand for a deflection pass towards CF. Good anticipation by RF to cut in front of his marker and latch onto the spill out to score.

#### Legend

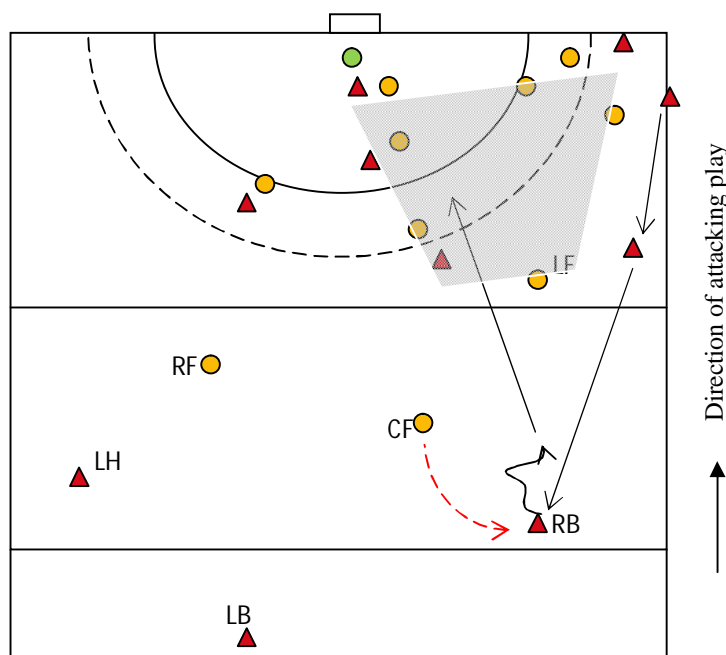
- ▲ AUS attacking set up
- GER defensive set up

- movement of ball
- player running line

- e) Efforts that fall under the category of 'Others' registered 89 hits with the lowest effectiveness rate at 12% and the highest turnover rate at 65%. There were substantial attempts to move the ball out of crowded zones especially in Zone 1 & 5, often back into deep defense to commence another play. This gives the defensive team sufficient time to reorganize and set up their first pressing line thus the impact of having the ball close to the circle in the first place was largely nullified. The tactical intention of defending team is also crucial in contributing to the low success rate. This tactical play involves the

center forward playing a crucial role in cutting off the transfer passing lane. The tendency is for teams to play the ball back into deep defense when free hits are awarded closer to the 23m line in Zone 2 & 4. The opposition defense is intact and organized with the first line of defense in position, ready for another press situation in a build up play. Again, the territorial gain of having the ball close to opposition circle in the first place is lost. Zone 1 has the highest number of other play. Besides the direct approach for circle penetration through shorts passes and eliminations and hard hits, teams realized the limitations at hand hence the indirect approach through other play. More often than not, the ball is played out of the zone through series of passes and dribbles which provides the defensive team sufficient time to reorganize.

#### Illustration of defensive set up to force play into a particular zone



#### *Australia v England (CT)*

*Free hit for England in Zone 1. ENG RB receives the second pass out of the crowded zone. AUS CF runs on a curve to prevent transfer and exert enough pressure to force the RB to hurry with his pass into the intended zone where it was easily intercepted by AUS defense.*

#### Legend

- AUS defensive set up
- ▲ ENG attacking set up

- player ball handling path
- - - - - player running line

intended defensive zone

- 2) Zone 1 and 5 which have the smallest playing area recorded more than half of the number of free hits awarded with 338/640. Understandably so as these free hits include long corners awarded in these 2 zones. Zone 1 is also perceived as the ideal spot to run down the clock to maintain score line as evident in the Spain v Australia match in the World Cup. In that instance, Australia managed to string 9 consecutive free hits to retain possession in the area to shave off almost 2 minutes when the score was 2-1 in their favor.

- 3) Zone 1 has the highest number of hits with 198 and Zone 2 with 142 for a total of 340/640. These 2 zones recorded more than 50% of total free hits as compared to the other 3 zones and this is largely due to the fact that teams tend to orchestrate their attacking moves on the right side which is perceived to be the stronger side for attackers and present more defending difficulties for the defensive team.
- 4) Covering wide section of the middle part of the pitch from one end of the D to another, Zone 3 recorded the least number of free hits awarded with only 37/640. It is only 6% of the total number of free hits over 2 competitions. The defensive mentality of the teams to close the inside channel and force opposition attacking play out wide closer to the sidelines meant there were less attacking attempts through the middle. The center channel provides the shortest running line towards the circle and teams will be extra vigilant to protect that area. The presence of a free defender in that zone, usually with the fundamental rule of 'putting oneself in line between the ball and goal' presents additional obstacle for the attacking team if they choose to go down that route. Most of the attempts have been well defended thus teams will look for alternative channels as such.
- 5) In Zone 4, there were more attempts at transfer play and others as compared to Zone 2. These 2 zones present more playing space and outlet options hence teams will look for alternatives when the opportunity for the direct approach is lost i.e. unable to progress with auto play with the opposition defense intact. Also, the tendency for right sided offensive move is quite prevalent thus the switch of play from Zone 4.

## 7.0 COMPARISON: CHAMPIONS TROPHY & WORLD CUP

### DATA FROM CHAMPIONS TROPHY

METHOD ZONE	Zone 1			Zone 2			Zone 3			Zone 4			Zone 5			Total		
	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×
Short passes and eliminations	4	18	30	7	14	25	5	-	9	5	7	12	6	18	26	27	57	102
Hits into D after 5m	2	2	14	2	2	7	2	-	2	3	2	5	2	4	2	11	10	30
Transfer play	-	4	2	1	1	4	-	-	-	2	4	5	4	-	1	7	9	12
Deflection pass into D	2	-	2	-	-	-	1	-	1	-	1	-	-	1	-	3	2	3
Others	3	2	6	-	1	7	1	-	1	-	1	8	-	2	3	4	6	25
Total	91			71			22			55			69			308		

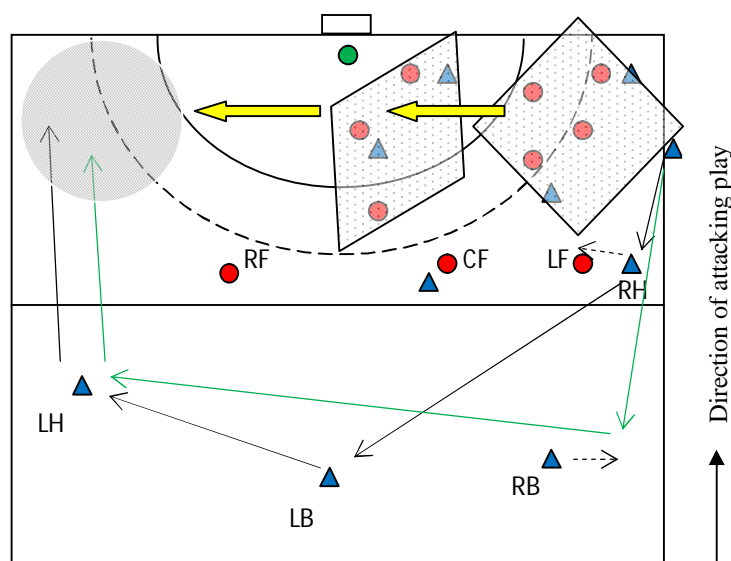
## DATA FROM WORLD CUP

METHOD ZONE	Zone 1			Zone 2			Zone 3			Zone 4			Zone 5			Total		
	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×	√	=	×
Short passes and eliminations	7	34	25	6	19	17	3	1	-	3	12	11	9	10	22	28	76	75
Hits into D after 5m	4	2	11	1	2	8	2	2	1	2	5	6	2	2	7	11	13	33
Transfer play	-	2	4	1	2	5	-	-	-	2	2	5	-	1	6	3	7	20
Deflection pass into D	1	-	1	-	2	1	1	-	3	-	-	3	-	-	-	2	2	8
Others	3	4	9	1	1	5	1	1	-	1	4	12	1	4	7	7	14	33
Total	107			71			15			68			71			332		

### Key points:

- 1) There was a slight decrease in the number of attempts to play short passes and eliminations during the World Cup while a significant increase in other playing methods is noted. In Zone 1, 4 and 5, teams were making more passes back into their deep defense to commence another build up play rather than taking the risk of losing possession in a very congested area with fewer players. While these efforts did not really increase the success rate for circle penetration, teams improved on their ability to retain possession while reducing the failure rate quite significantly.
- 2) The number of attempts to transfer play by teams is almost similar over the 2 competitions. However there was a drop in success rate from 25% in CT to 10% in WC with a huge jump in the failure rate for circle penetration from 43% in CT to 67% in WC. One of the major factors for this setback can be attributed to the delay in movement of the ball across often requiring 4 or 5 passes by which the defense would have ample time to reset. More often than not, the transfer will lead to another play in the opposite congested area where the likelihood for successful entries into the circle diminished significantly.

### Illustration of a transfer of play from Zone 1

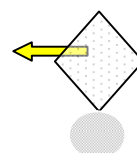


*Free hit in Zone 1, which requires 4 passes for the transfer across. The delay meant that players from both teams will overload the intended attacking area. This play can be enhanced with reduced number of passes by infield leading of RH to pull in the opposition LF and opening passing lane to RB. Early pass with good ball speed to intended shaded zone means more time and space for strikers to maneuver their way into D.*

#### Legend

- ▲ attacking team
- defending team

- ← movement of ball
- - - player running line



- movement of players
- intended attacking zone

- 3) The number of attempts to play the deflection passes from set plays increased from 8 in CT to 12 in WC. It is positive to note that teams are utilizing more of this play given the high percentage of success in circle penetration as explained in **Heading 6.0 point #1(d)**. It is however disappointing to note that the success rate plummeted from 38% in CT to 17% in WC with a drastic rise in the failure rate from 38% in CT to 66% in WC. This play requires excellent coordination, understanding, eye contact, well timed leads and precision and pace of pass by everyone involved. From the matches in WC, there were numerous instances of break down in play because players were unsure of each other's action. There appeared lack of coordination and understanding. Obviously, teams have not spent enough hours practicing and rehearsing the movements required. I suspect the short time frame between the 2 competitions did not allow teams the luxury to work on these set plays hence the poor results.
- 4) The number of attempts under 'others' increased from 35 in CT to 54 in WC. Even though the success rate for circle penetration registered only a slight increase, the ability to hold possession improved while reducing loss of ball possession by more than 10%.
- 5) The statistics for hits into the D after ball movement of 5m or more were quite similar over the 2 competitions. There was a slight increase in the number of hits in the WC but the percentages of success did not quite match the figure from CT. The failure rate however, remains status quo.

## 8.0 OFFENSIVE v DEFENSIVE STRATEGY

Offensive	Defensive
<ul style="list-style-type: none"> <li>• Quick assessment of situation. If opposition defense is reorganizing, quick elimination utilizing 'self pass' rule and '3D' skills with assist from fellow strikers for short passing options is a risk worth taking. Auto play in Zone 2, 3 &amp; 4 will be effective when free hit is closer to the dotted circle. When cornered in Zone 1 &amp; 5, ball strength is crucial to retain possession with another free hit.</li> <li>• With quick ball movement of 5m or more either by self or pass, a strong hit into the circle can provide some surprises and rewards too!</li> <li>• Purposeful transfers can be effective with limited passes to catch the defense on the move. Surrounding players must provide passing options and open passing lanes for quick execution. Mini aerials will be helpful to bypass lock down area especially in Zone 1 &amp; 5. These 2 zones are also ideal spots to run down the clock should the need arises.</li> <li>• Set play via deflection pass is an effective tool to get the ball into the circle. Extremely difficult for opposition defense to prevent the deflected ball when done swiftly and coordinated well. Most effective when executed in Zone 2, 3 &amp; 4 closer to the dotted circle.</li> <li>• Recognize opposition defense intention early and utilize the appropriate playing method to capitalize on the situation for more successful circle penetrations.</li> </ul>	<ul style="list-style-type: none"> <li>• Squeeze the playing area and cut off outlet passing options in Zone 1 &amp; 5. Forwards play a key role in this by their strategic positioning and running line. Defender confronting the ball carrier must engage immediately as soon as the ball is moved. Employ the appropriate tackling techniques with back up defenders ready to provide the double/triple team tackling.</li> <li>• Depending on team tactical requirement, allow delayed transfer by astute positioning of forward line or prevent transfer and re direct play back into the same channel.</li> <li>• Alert to the quick movement of deflector towards ball carrier in set play situation especially in Zone 3 and closer to the dotted circle. Tight marking of opposition forwards in the circle is crucial.</li> <li>• Quick passes for counter attack opportunities upon turnover or win a free hit and reorganize.</li> <li>• In addition to marking opposition strikers, defenders in the circle to be alert for element of surprises i.e. hard hits into D.</li> </ul>



## 9.0 CONCLUSION

From the findings, it is obvious that the playing methods used during free hits in the attacking 23 as a result of the new rule have not brought about much success for teams in terms of circle penetration. The question is

- how can we improve on the success percentages?
- where will this new rule take us?

I have no doubt that teams will continue to work on this area of play and come up with innovative ways and improve on their tactical approach to get into the circle for goal scoring opportunities. Further analysis will enhance the methods discussed. For me, the new rule is a breath of fresh air for the sport and is here to stay. Besides eliminating the danger from direct hits, it has increased the game speed and encouraged creativity in players and coaches alike. Given time, teams will continue to polish their acts and we will see more definite patterns and set plays in the future.

On that note, I wish to conclude the following:

- phase of the game will have an effect on a team's approach when awarded with a free hit in attacking 23. When in comfortable lead, players might prefer to hold possession and maintain territorial domination or perhaps run down the clock in closing stages of a match. On the contrary players will tend to quicken the tempo and take more risk when chasing the score line.
- good decision making at the opportune time and location to utilize the auto play will probably see an increase in the success rate.
- there will definitely be an increase in attempts for set plays utilizing deflection pass for free hits closer to the dotted circle given the high percentage of success. Teams will need to be more innovative in devising new ways. From the matches analyzed, there was no observation of any of the teams exploiting the 2<sup>nd</sup> part of the rule that says *'another player of either team who can legitimately play the ball must deflect, hit or push the ball before it enters the circle, or after this player has touched the ball, it can be played into the circle by any other player including the player who took the free hit'*. Thus it will be interesting to see what teams can come up with in the next major competition.
- tactical preference based on own team and opposition strengths and weaknesses will determine methods used.
- location of free hits will have a major impact on the methods used.

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**JULY 2010**