# Defending Corner Kicks: Analysis from the English Premier League

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# Abstract

***The aim of this study was to explore tactical behaviour when defending corner kicks within the English Premier League. Specifically, the types of marking and defensive players positioned at the goalposts were investigated. A total of 436 corner kicks from 50 English Premier League games were analysed. The most commonly used marking system was one-to-one marking (90.1% of total corners), with zonal marking being used less often (9.9% of total corners). There was no significant association between the marking set-up and the number of attempts at goal conceded when defending corner kicks (p>0.05).*** ***However, teams who applied zonal marking conceded fewer goals and fewer attempts at goal than teams who used one-to-one marking. The most common set-up for defenders positioned at the goalposts was having a defender positioned only on the far post (47.3% of total corners). There was no significant association between the positioning of defensive players at goalposts and the number of attempts at goal conceded when defending corner kicks. A further detailed analysis of defending corner kicks is still required and suggestions have been made for future studies.***

***Key words:*** notational analysis, soccer, corner kicks, defending.

# 1. Introduction

Soccer is arguably the most intensively researched sport within the domain of sports performance analysis. The principle avenues of research include possession (Jones *et al*., 2004); tactical behaviour (Taylor *et al*., 2005a); positional demands (Bloomfield *et al*., 2007); and the influence of situational factors such as score-line (Redwood-Brown *et al*., 2012) and match location (Tucker *et al*., 2005). In soccer, scoring goals is the ultimate determinant of success and this has consequently received considerable attention in notational analysis research (e.g. Jones *et al*., 2004). In elite soccer, approximately one-third of goals are scored either directly or indirectly from a set-play, irrespective of the tournament or league (Bangsbo and Peitersen, 2000; Yiannakos and Armatas, 2006). Carling *et al.* (2005) stated that in domestic and international soccer, successful teams are more efficient than their opponents at scoring from set-plays such as free-kicks, throw-ins and corner kicks. Successful teams had a set-play to goal ratio of 1:7, whilst their opponents had a set-play to goal ratio of 1:15. Armatas *et al.* (2007) stated that research and preparation of set-plays from both a defensive and attacking perspective are essential for winning games. A corner kick is awarded to the attacking team when the defending team last made contact with the ball prior to it passing over the goal line outside or over the goalposts (Luongo, 1996). Carling *et al*. (2005) analysed corner kicks at the 2002 World Cup and found that 13% of the total goals scored at the World Cup were from corner kicks. In-swinging corners were found to be more successful in creating goals, as in-swinging corners led to three times more goals than out-swinging corners. Taylor *et al*. (2005b) analysed 20 English Premier League matches from the 2001-2002 season, which focused on corner kicks as a method of scoring goals. Their findings were that of 59 goals scored, 6 (10.2%) were as a direct result of a corner kick. In total 217 corner kicks were examined with 68 (31.3%) resulting in an attempt on goal. Of these attempts, 8% resulted in goals, 49% in shots off-target and 43% in shots on-target. In agreement with Carling *et al.* (2005), Hughes (1996) also postulated that the most dangerous corner kick at an elite level is considered to be the in-swinging corner and therefore the greatest threat for the defending team at corner kicks is at the near post. However, Hughes (1996) did state that it should not be assumed that goals will never be scored at the far post. Attacking teams often attempt to flick the ball on from a near post position so that a team member towards a far post position receives the ball. By analysing corner kicks it may be possible for coaches to select the most appropriate defensive and attacking tactics for corner kicks. However, there is currently limited research into the methods of defending corner kicks in the game of soccer.

Tactics in defence are applied in an attempt to prevent the opposing team from scoring (Lodziak, 1966). There are various tactical approaches that are applied by teams in an attempt to prevent the opposition from scoring from a corner kick. These include the defensive set-up, such as marking one-to-one or zonally, and the placement of defenders on the goalposts. There are two main tactical methods for defending a corner kick: zonal marking and one-to-one marking. When adopting zonal marking, the majority of the defensive players are responsible for defending a particular spatial sector (zone) of the pitch. It is important to note that these spatial sectors overlap (Wilkinson, 1996). By delegating a zone of responsibility, decision making is reduced and defensive players are able to concentrate on clearing the ball out of the penalty area and away from danger (Welsh, 1999). Edward (2003) stated that the advantage of applying zonal marking is that the defence tend to keep their shape, since the defenders are not pulled out of position. However, problems can occur in the ‘grey’ areas, where the spatial sectors overlap. In one-to-one marking, the majority of the defensive players are responsible for defending and marking opposing players rather than a specific zone of the pitch. Marking in this context means tracking an opposing player’s movement, in order to prevent them from receiving a pass and thus reducing their contribution to the game (Lodziak, 1966). It is important that all players accept their share of defensive responsibilities in this system for it to be successful. Hughes (1996) concluded that in tactical terms, the primary concern for the defending team at set-plays is to ensure the best possible balance between marking players and marking space.

When teams are defending corners, consideration should be given to the positioning of players around the areas of the goalposts. Previous literature (Hughes, 1996; Wilkinson, 1996; Welsh, 1999; Bangsbo and Peitersen, 2000; and Mulqueen, 2011) has suggested that a defender should be positioned at each goalpost so that they can guard the posts when defending corners. The player at the near post should be concerned with the space in front of them and they should appreciate that they may have to defend an in-swinging corner that is hit with pace. If the corner kick is crossed in high, the goalkeeper may choose to come off of the goal-line in an attempt to catch or punch the ball; in this situation the defender at the near post should move to a position on the goal-line to defend the goal (Hughes, 1996). Wilkinson (1996) stated that both the players will cover the goal if the goalkeeper leaves the goal-line in an attempt to collect the ball. If the goalkeeper is positioned in the centre of the goal, the defender who is positioned at the far post should stand on the goal-line just inside the post. It is apparent that coverage of the near and far goalposts are very important in preventing a goal being scored from a corner kick. It is therefore important to explore whether defending teams are positioning players at the goalposts and if these players perform any blocks when the opposing team have attempts on target.

Due to the paucity of research relating to defending corner kicks and the important practical implications of such findings, the aim of this study was to investigate the defensive tactics used by teams from the English Premier League. Specifically, the marking set-up and the positions of defensive players at the goalposts prior to the corner kick being taken were explored.

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# 2. Method

Corner kicks were sampled from 50 English Premier League soccer matches during the 2011-12 season. All the games sampled were taken from broadcast coverage provided by Sky Sports television. Each game was recorded and 436 corner kicks were analysed in total. The key tactical behaviours were developed and stringent operational definitions were assigned to each indicator. The data were recorded onto a specifically designed Microsoft Office Excel spread sheet (Microsoft Corporation, Excel 2010, Redmond, WA). Pilot testing was conducted on 50 corner kicks to develop the operational definitions in an attempt to make them as clear and unambiguous as possible (Hughes, 2008). Corner kicks analysed within the pilot testing were not used within the sample for this study. Variables related to defensive set-up prior to the corner kick were recorded. First, the type of marking system adopted (zonal marking or one-to-one marking) was recorded. A zonal marking set-up was recorded when the majority of the defending players within the penalty box were positioned at a particular spatial sector prior to the corner kick being taken. A one-to-one marking set-up was recorded when the majority of the defending players within the penalty box were positioned against a specific member of the opposition prior to the corner kick being taken. Second, the positioning of defensive players at the goalposts (only a player on the near post; only a player on the far post; players positioned on both the near and far posts; or no defensive players on the goalposts) was recorded. Only a player on the near post was recorded when a defensive player was positioned inside and next to the near post, and no defensive player was positioned inside and next to the far post prior to a corner kick being taken or as the ball was struck by the corner kick taker. Only a player on the far post was recorded when a defensive player was positioned inside and next to the far post, and no defensive player was positioned inside and next to the near post prior to a corner kick being taken or as the ball was struck by the corner kick taker. Players positioned on both the near and far posts was recorded when a defensive player was positioned inside and next to the near post, and another defensive player was positioned inside and next to the far post prior to a corner kick being taken or as the ball was struck by the corner kick taker. No defensive players on the goalposts was recorded when there were no defensive players inside and next to either goalpost prior to the corner kick being taken, or as the ball was struck by the corner kick taker. Once the corner kick had been taken, variables regarding the most significant outcome of the corner kick were recorded. The operational definitions for the corner kick outcomes are presented in Table 1. If the football was played out of the 18 yard box by the attacking or defensive team, the corner kick was considered to be complete.

Table 1. The operational definitions of the corner kick outcomes.

|  |  |
| --- | --- |
| Corner kick outcome | Operational definition |
| Goal | The ball went over the goal-line and into the net. The referee awarded a goal. |
| Goalkeeper save | The ball would have entered the net but for being prevented by a goalkeeper’s save. |
| Defensive block | The ball would have entered the net but for being prevented by a defender who was the last man. |
| Near post block | Any goal attempt that was heading towards the goal which was blocked by a defender who was positioned inside and next to the near post prior to the corner kick being taken. |
| Far post block | Any goal attempt that was heading towards the goal which was blocked by a defender who was positioned inside and next to the far post prior to the corner kick being taken. |
| Attempt off target | Any attempt by the attacking team that was not directed within the dimensions of the goal. An attempt that made contact with the crossbar or either of the posts was classified as an attempt off target. |
| Goalkeeper catch | The goalkeeper gained possession of the ball by catching the ball. |
| Goalkeeper punch | The goalkeeper made contact with the ball by using a punching action. |
| Ball cleared for another corner | A defensive player made contact with the ball and the referee awarded another corner kick. |
| Ball recycled out of the 18 yard box | The attacking team made contact with the ball which led to the ball exiting the 18 yard box and possession being retained by the attacking team. |
| Ball cleared out of the 18 yard box | A defensive player made contact with the ball and it excited the 18 yard box. |
| Defensive free kick | The referee awarded a free kick to the defensive team. |
| Ball did not come into play | The corner kick failed to enter the field of play. |
| Ball exited 18 yard box without any contact | The ball was not touched by any player and the ball exited the 18 yard box. |

**2.1. Reliability**

Inter-observer and intra-observer reliability analyses were conducted to assess the objectivity and reliability of the data respectively. For inter-observer reliability, an analyst who had two year’s experience of analysing soccer, observed all 436 corner kicks. One week prior to analysing the corner kicks, the analyst was given access to the specifically designed Microsoft Excel spread sheet and the operational definitions. The data collected by the moderately experienced researcher was compared to the data collected by the initial observer. The intra-observer reliability analysis was conducted by the initial observer analysing 109 corner kicks (25%) from the original sample. This was carried out four weeks after the initial analysis in an attempt to reduce potential learning effects. Kappa were utilised to assess both inter-observer and intra-observer reliability for defensive set-up (marking set-up and positions of players on goalposts posts) and corner kick outcomes (goal, defensive block etc.) (see Table 2).

Table 2. Reliability tests and Kappa statistics.

|  |  |  |  |
| --- | --- | --- | --- |
| Reliability  Test | Set-up/Outcome | Kappa Value | Strength of  Agreement  (Altman, 1995) |
| Inter-observer | Defensive set-up | 0.9 | Very good |
| Inter-observer | Corner kick  outcomes | 0.87 | Very good |
| Intra-observer | Defensive set-up | 0.93 | Very good |
| Intra-observer | Corner kick  outcomes | 0.92 | Very good |

**2.2. Data Analysis**

All data are presented as absolute frequencies and supported by percentage occurrence (stated in brackets). When the chi-squared tests were analysed with all possible outcomes, some cells had an expected value less than 5, thereby violating the assumption underpinning the use of chi-squared tests (see Thomas and Nelson, 1996). In an attempt to negate this violation, the outcome data were collapsed in the following fashion. Goal attempts were defined as either goal, attempt off target, GK save or block (inclusive of all three block permutations), whereas the “non-scoring outcomes” were defined as GK Action (e.g. GK catch + GK punch), Attacking Outcome (e.g. ball cleared for another corner + ball recycled), or, Defending Outcome (e.g. ball cleared out of 18 yard box + defensive free-kick + ball did not come into play + ball exited 18 yard box without any contact). However, even when the data were collapsed, the non-scoring outcomes of GK action and attacking outcome still violated the assumption underpinning the use of chi-squared tests. Therefore, the following associations were tested statistically using the chi-squared (ᵡ2) test of independence; (1) goal attempts conceded in relation to the marking set-up, (2) the number of non-scoring defending outcomes in relation to the marking set-up, (3) goal attempts conceded in relation to player positioning on the goalposts, and, (4) the number of non-scoring defending outcomes in relation to player positioning on the goalposts. The alpha level was set at 0.05.

**3. Results**

From the 436 corner kicks that were analysed within this study 18 goals were scored. The findings from the study reveal that attacking teams were successful at scoring a goal every 24.2 corner kicks. There were 136 attempts at goal from the 436 corner kicks that were observed, this equates to 31.2% of corner kicks leading to an attempt at goal. Of the 136 attempts at goal, 90 (66.1%) of these were off target, 28 (20.6%) were on target but did not lead to a goal and 18 (13.3%) of these led to a goal being scored. From all the corner kicks observed, the most frequently used marking set-up utilised by teams was one-to-one marking (90.1% of total corners). A zonal marking set-up was only seen in 9.9% of the total corners (Table 3).

Of the 393 corner kicks where the defensive team used a one-to-one marking set-up, 17 goals were conceded from a corner kick. This implies that the defensive team were able to prevent the attacking team from scoring from a corner kick for 95.7% of total corners when applying a one-to-one marking set-up. For the 43 corner kicks where the defensive team used a zonal marking set-up, one goal was conceded from a corner kick. This suggests that the defensive team were able to stop the attacking team from scoring from a corner kick for 97.7% of total corners when using a zonal marking set-up. There was no significant association between the marking set-up and the number of attempts at goal conceded when defending corner kicks (ᵡ2 = 0.02, p = 0.886). When a one-to-one marking set-up was used 31.3% of corner kicks resulted in a goal or an attempt at goal, whilst it was 30.2% when zonal marking was utilised. The attacking team were able to convert 13.8% of attempts at goal into a goal when the defensive team applied one-to-one marking. However, when the defensive team used zonal marking, the attacking team were only able to convert 7.7% of attempts at goal into a goal (Table 3).

Table 3. Marking set-up and attempts at goal.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Marking set-up | Frequency | Goal | GK save | Defensive block | Block at far post | Block at near post | Attempt off target |
| One-to-one (%) | 393  (90.1) | 17 (4.3) | 11 (2.8) | 5 (1.3) | 4 (1.0) | 3 (0.8) | 83 (21.0) |
| Zonal (%) | 43 (9.9) | 1 (2.3) | 4 (9.3) | 1 (2.3) | 0 (0) | 0 (0) | 7 (16.3) |

Other corner outcomes that did not involve an attempt at goal were fairly similar between the two types of marking set-up. There was no significant association between the marking set-up and the non-scoring defending outcomes (ᵡ2 = 0.02, p = 0.966). When a team applied one-to-one marking, 52.2% of corner kicks were cleared by a defensive player out of the 18 yard box. This was very similar to teams who applied zonal marking, where 53.5% of corner kicks were cleared by a defensive player out of the 18 yard box (Table 4).

Table 4. Marking set-up and other outcomes.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marking set-up | GK Actions | | Attacking Outcomes | | Defending outcomes | | | |
|  | GK catches the ball | GK punches the ball | Ball cleared for another corner | Ball recycled out of the 18 yard box | Ball cleared out of 18 yard box | Defensive free kick awarded | Ball did not come into play | Ball exited 18 yard box without any contact |
| One-to-one (%) | 19  (4.8) | 16  (4.1) | 13  (3.3) | 4  (1.0) | 205 (52.2) | 10  (2.5) | 0  (0) | 3  (0.8) |
| Zonal (%) | 0  (0) | 2  (4.7) | 2  (4.7) | 2  (4.7) | 23  (53.5) | 0  (0) | 1  (2.3) | 0  (0) |

The most common set-up for defenders positioned at the goalposts was having a defender positioned only on the far post (47.3% of total corners). There were no defenders positioned on either the near post or the far post in 22.2% of all the corners observed. 15.6% of all corners analysed highlighted that there was just a defender positioned on the near post. Only 14.9% of all corners had a defender positioned at the near post and at the far post (Table 5).

When a defender was positioned only on the near post, only one goal was conceded and this type of positioning was applied for 68 corner kicks. This means that a goal was not conceded for 98.5% of corner kicks when a player was positioned just at the near post. This percentage was higher than the other positions at goalposts; no defenders on the goalposts (96.9%); defensive player just on the far post (95.7%); and defensive players positioned on both posts (92.3%). There was no significant association between the positioning of defensive players on the goalposts and the number of attempts at goal conceded when defending corner kicks (ᵡ2 = 5.10, p = 0.165). When defensive players were positioned at both goalposts, 43.1% of corner kicks led to an attempt at goal. This was considerably higher than the percentages of corner kicks that led to an attempt at goal for the other positions at goalposts; defensive player only at near post (28%); no defensive players at either post (28.9%); and defensive player only at far post (29.6%) (Table 5).

When the defending team only positioned a defensive player at the near post, the attacking team scored a goal or had an attempt on target for only 6% of the corner kicks. This was lower than any of the other positions at goalposts; defensive player only at far post (9.2%); no defensive players at either post (11.4%); and defensive players positioned at both posts (18.5%). Also, when the defensive team positioned a player only at the near post, the attacking team were only able to convert 5.3% of their attempts at goal into a goal. This again was lower than any of the other positions at goalposts; no players at either post (10.7%); defensive player only at far post (14.8%); and defensive players positioned at both posts (17.9%).

It should also be noted that seven defensive blocks were performed by players positioned at the goalposts. Four of these blocks were performed at the far post and three were performed at the near post. Four of the seven blocks performed by players positioned at goalposts, were observed when teams positioned defensive players at both goalposts (Table 5).

Table 5. Defensive players positioned at goalposts and attempts at goal.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Defenders positioned at goalposts | Frequency | Goal | GK save | Defensive block | Block at far post | Block at near post | Attempt off target |
| Only on far post (%) | 206  (47.3) | 9 (4.3) | 6 (2.9) | 2 (1.0) | 2 (1.0) | 0 (0) | 42 (20.4) |
| No defensive players on goalposts (%) | 97 (22.2) | 3 (3.1) | 6 (6.2) | 2 (2.1) | 0 (0) | 0 (0) | 17 (17.5) |
| Only on near post (%) | 68 (15.6) | 1 (1.5) | 1 (1.5) | 1 (1.5) | 0 (0) | 1 (1.5) | 15 (22.0) |
| Defensive players on both goalposts (%) | 65 (14.9) | 5 (7.7) | 2 (3.1) | 1 (1.5) | 2 (3.1) | 2 (3.1) | 16 (24.6) |

There was no significant association between the positioning of defensive players on the goalposts and the non-scoring defending outcomes (ᵡ23 = 2.05, p = 0.562). When a team positioned only a defensive player at the near post when defending corner kicks, they were able to clear the ball out of the 18 yard box for 58.8% of corner kicks. This was higher than any of the other positions at goalposts; only on far post (53.9%); no defensive players on goalposts (48.5%); and defensive players on both goalposts (46.2%). The other outcomes were fairly similar but it appears that defensive teams were awarded more free-kicks when they had no defensive players positioned on the goalposts (Table 6).

Table 6. Defensive players positioned at goalposts and other outcomes.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Defenders positioned at goalposts | GK Actions | | Attacking outcomes | | Defending outcomes | | | |
|  | GK catches the ball | GK punches the ball | Ball cleared for another corner | Ball recycled out of the 18 yard box | Ball cleared out of 18 yard box | Defensive free kick awarded | Ball did not come into play | Ball exited 18 yard box without any contact |
| Only on far post (%) | 11 (5.3) | 7 (3.4) | 8 (3.9) | 2 (1.0) | 111 (53.9) | 3 (1.5) | 1 (0.5) | 2 (1.0) |
| No defensive players on goalposts (%) | 1 (1.0) | 8 (8.2) | 4 (4.1) | 2 (2.1) | 47 (48.5) | 6 (6.2) | 0 (0) | 1 (1.0) |
| Only on near post (%) | 4 (5.9) | 1 (1.5) | 2 (2.9) | 2 (2.9) | 40 (58.8) | 0 (0) | 0 (0) | 0 (0) |
| Defensive players on both goalposts (%) | 3 (4.6) | 2 (3.1) | 1 (1.5) | 0 (0) | 30 (46.2) | 1 (1.5) | 0 (0) | 0 (0) |

**4. Discussion**

The aim of this study was to investigate the defensive tactics used by teams from the English Premier League, specifically exploring the marking set-up and the positions of defensive players at the goalposts prior to the corner kick being taken. There were 136 (31.2%) attempts at goal from the 436 corner kicks observed. This result is very similar to the findings of Taylor *et al*. (2005b) who analysed corner kicks within the English Premier League during the 2001-2002 season, Taylor *et al*., (2005b) observed 217 corner kicks with 68 (31.3%) resulting in an attempt on goal. This suggests that since Taylor *et al.* (2005b) recorded their data over a decade ago, defending teams from the English Premier League still concede a similar amount of attempts at their goal from corner kicks. The current study found that 13.3% of corner kicks resulted in goals, 66.1% in shots off-target and 20.6% on-target. Taylor *et al.* (2005b) found that of the attempts at goal, 8% resulted in goals, 49% in shots off-target and 43% in shots on-target. This implies that the defending teams are now more successful at preventing the attacking team from achieving attempts on target from corner kicks than they previously were ten years ago. However, it is important to note that the attacking team are actually more efficient at scoring goals from the attempts that they do have at goal.

From the corner kicks observed, the most common marking set-up was one-to-one marking, which was used for 393 corner kicks. A zonal marking set-up was only used for 43 corner kicks. This suggests that the managers and coaches who worked in the English Premier League during the 2011-2012 season preferred their teams to adopt a one-to-one marking system when defending corner kicks. Therefore, the emphasis was on players tracking the movement of opposing players in order to prevent them from receiving a pass and thus reducing their contribution to the game (see Lodziak, 1966). This apparent preferred man-to-man strategy may alleviate any organisational issues caused by zonal marking e.g. uncertainty as to a player’s zone of responsibility and where spatial sectors adjoin. There were 18 goals scored from corner kicks and 17 of these were scored when the defensive team was applying a one-to-one defensive set-up. One goal was scored against a zonal marking system. It could be stated that the one-to-one marking set-up did not concede from 95.7% of corner kicks and teams adopting to defend using a zonal marking set-up did not concede from 97.7% of corner kicks. Although this may suggest that a zonal marking set-up is best for defending corners, the percentage difference is very small.

The percentage of corner kicks resulting in a goal or attempt at goal was higher when the defending team applied a one-to-one marking set-up (31.3%) compared to a zonal marking set-up (30.2%). However, once again the percentage difference is very small. A key finding from the analysis was that the attacking team were only able to convert 7.7% of attempts at goal into a goal when the defensive team utilised zonal marking, this percentage was 13.8% when the defensive team applied one-to-one marking. It is difficult to interpret how much impact the defensive marking system had on the attacking team’s attempts at goal to goals conversion rate, as the attempts at goal were affected by other situational factors such as the location of the attempt (Yiannakos and Armatas, 2006; Wright *et al*., 2011), thereby warranting further, more detailed analyses.

There was no significant association between the marking set-up and the number of non-scoring defending outcomes (p = 0.966). When a team adopted a zonal marking set-up, they were able to clear the ball out of the 18 yard box for 53.5% of the corner kicks. This percentage was marginally lower when teams applied a one-to-one marking set-up (52.2%). It should be noted that only 43 corner kicks were analysed where the defensive team adopted a zonal marking set-up. A larger sample of corner kicks where defensive teams use a zonal marking set-up is required to clearly distinguish between the successfulness of different defensive marking set-ups and to generate a representative profile of performance (see Hughes *et al*., 2001). The previous literature presented on one-to-one marking and zonal marking (e.g. Lodziak, 1966; Welsh, 1999; Edward, 2003) suggests the advantages and disadvantages of applying these marking set-ups but it has not been stated which marking set-up is the best for defending corner kicks. This study aimed to explore the successfulness of one-to-one marking and zonal marking in defending corner kicks and this has been achieved, however, due to the low number of corner kicks where a zonal marking set-up has been used, it cannot be stated with any great conviction which marking set-up is the best for defending corner kicks.

With regards to player positioning on the posts, previous literature has stated that it is important to position defensive players on both the near and far posts when defending corner kicks (Hughes, 1996; Wilkinson, 1996; Welsh, 1999). However, within this study only 14.9% of the total corners analysed had defenders positioned inside and next to both the near and far posts. This suggests that many managers and coaches within the English Premier League during the 2011-2012 season did not regularly have defenders positioned at both the near and far posts when defending corner kicks. Defensive teams were actually more likely to have no players positioned on the goalposts (22.2% of total corners) than having defenders positioned on both the near and far post. The most commonly used tactic for positioning defenders on the goalposts, was to just employ a defender at the far post (47.3% of total corners).

There were 68 corners where the defensive team had a defensive player positioned just on the near post and only one goal was conceded when the teams employed this set-up. This means that the defensive team did not concede from 98.5% of corner kicks when they had a player positioned just on the near post. This percentage was the highest of all the different set-ups for positioning players on the goalposts. The lowest percentage (92.3%) for not conceding from a corner kick was seen when there were players positioned on both the goalposts.

There was no significant association between the positioning of defensive players on the goalposts and the number of attempts at goal conceded when defending corner kicks (ᵡ23 = 5.1, p = 0.165). When defensive players were positioned at both goalposts, 43.1% of corner kicks led to an attempt at goal. This is considerably higher than the percentages of corner kicks that led to an attempt at goal for the other positions at goalposts; defensive player only at near post (28%); no defensive players at either post (28.9%); and defensive player only at far post (29.6%). It appears that the attacking team will have more attempts at goal from corner kicks if the defensive team position defensive players at both goalposts. A possible explanation for this could be that two defensive players are being used primarily to defend a small area inside the goalpost with a focus on blocking attempts on target and providing cover for the goalkeeper rather than attempting to mark an opposing player or a designated spatial sector (Lodziak, 1966; Wilkinson, 1996). This would mean that fewer defensive players are responsible for marking an opposing player or spatial sector and this would enable the attacking team to have more attempts at goal. Consequently, one area of future research could be to examine player-player (dyadic) interactions e.g. attacker-defender or even defender-defender coupling (see McGarry *et al.*, 2002; Bartlett *et al.*, 2012), during corner kicks. With the advances in player tracking technology and the use of sophisticated performance analysis solutions within professional soccer e.g. ProZone3 (ProZone Sports Ltd, Leeds, UK), quantifying spatial and temporal patterning between players can be readily achieved. Examining player-player interactions can be a fruitful line of scientific enquiry, and has been acknowledged as a crucial factor in gaining a more complete understanding of game behaviour (McGarry, 2009).

It is important to highlight that seven defensive blocks were executed by players positioned at the goalposts. Four of these blocks occurred at the far post and three were performed at the near post. Four of the seven blocks performed by players positioned at goalposts, were observed when teams positioned defensive players at both goalposts. As these players were positioned very close to the goal-line or on the goal-line, it could be suggested, tentatively, that these blocks prevented goals from being scored. Only 18 goals were scored from the 436 corner kicks, and it is likely that this number would have been higher had there not been the seven defensive blocks by defensive players positioned at the goalposts. Ultimately, there is a decision to be made by coaches and managers regarding the position of defensive players at goalposts when defending corner kicks. It may be advantageous to have players positioned at goalposts as they could block attempts that are on target and potentially prevent a goal from being scored (Lodziak, 1966). However, by placing defensive players at both goalposts the defensive team may experience more attempts on their goal as they have fewer players defending within the area where the ball is commonly delivered.

One limitation of this study, as mentioned previously, is the sample size of corner kicks where a zonal marking system was applied by the defensive team. For future studies, it would be advantageous to sample a greater size of corner kicks where zonal marking is applied as this would help to generate a representative profile of performance (Hughes *et al*., 2001). Moreover, the overarching strategy and relative success of a team’s corner kicks could be ascertained by using normative performance profiles (see O’Donoghue, 2005). This technique could be particularly advantageous in diagnosing strengths and weaknesses in corner kick performance. A further limitation of this study is the subjectivity involved with the significant outcome of the corner. Although the inter-observer reliability was very good, this area was extremely difficult to define. Future studies may choose to investigate all of the actions that occur with the football within the 18 yard box following a corner kick rather than just exploring one key outcome. The corner kick may be considered complete once the football has left the 18 yard box. It could be argued though that in certain situations the phase of play is still continuing and further actions should still be analysed. Another limitation of this study could be the definition of the defensive players positioned at the near post. Some coaches and managers could argue that they did have a player positioned at the near post, but according to our definition it may not have been recorded. This is because some players are positioned not inside the post but outside of the post and not directly next to the post. Therefore, greater consensus is needed with regards to wording and understanding of key operational definitions, a sentiment echoed by Williams (2012). For future studies, it may be of interest to explore how teams use a defender in front of the near post and the role that this player has in defending corner kicks. Another area to investigate is the number of players utilised to defend corner kicks and how this may change according to the number of players from the attacking team that are positioned within the 18 yard box. Teams may choose to use a different marking set-up or deploy players on particular posts depending on the amount of players from the attacking team that are present within or around the 18 yard box. A further area to explore could be the defensive tactics that can be applied when defending different types of corner kicks, such as out-swingers and in-swingers. For more detailed analyses, global positioning systems could be used to comprehensively track and monitor player movements and positioning during corner kicks.

**5. Conclusion**

The aim of this investigation was to explore the tactics for defending corner kicks within the English Premier League. It is clearly evident that the majority of coaches and managers within the English Premier League preferred to implement a one-to-one marking set-up. A greater sample of corner kicks where teams adopt a zonal marking set-up are required to thoroughly investigate the benefits of applying a zonal marking set-up. The most commonly used tactic for positioning defenders on the goalposts, was to just employ a defender at the far post. The least commonly used tactic for positioning defenders on the goalposts, was to have a defensive player positioned at each goalpost. This does not support the majority of previous coaching literature, which advocates the use of a player at each post when defending corner kicks.

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