

Notational analysis of goals scored from open play in International field hockey

There is limited scientific research into field hockey and the research that has been completed is dated. Development of pitch technology and major rule changes in recent years have meant that the previous research might not apply to modern play. The aim of the present study was to investigate how goals are scored in current international women's field hockey. Institutional ethical approval was attained.

In total 70 women's international field hockey matches were observed. Only goals scored from open play were considered in the study, a total of 130. Matches were taken from the Women's Olympic Qualifying Tournament 2000 (Milton Keynes, UK), the Olympic Games 2000 (Sydney, Australia) and the Commonwealth Games 2002 (Manchester, UK). The matches were recorded using a single video camera. Focus X2 (Elite Sport Analysis, Edinburgh, UK) was used for the purpose of analysis allowing frame by frame observation. Three phases of play leading up to the goal being scored were evaluated: repossession of the ball, passing into the D and the D phase. The pitch was divided into zones and specific hockey movements defined so that movement actions during each phase and time to complete each phase could be analysed. Hockey movements were defined as either a hit, flick, push, dribble, sweep or deflection and whether these movements were completed using an open or reverse stick. A one-way analysis of variance (ANOVA), chi-squared frequency analysis and Pearson correlation were employed to statistically assess patterns of play.

Most repossession occurred in the attacking half of the field outside the D (68%) by a free-hit (42%) or interception (38%). More balls were dribbled into the D (50%) than were hit (21%), pushed (28%) or swept (1%; $P < 0.01$) with more D entries from the right hand (45%) side of the pitch than the left (32%; Figure 1). Most goals were scored from a hit (34%) than any other shot type ($P < 0.01$) and more goals were scored from the areas nearest the goal. Fifty percent of goals were scored in the bottom left portion of the goal, with 38% being scored in the bottom right and 7 and 5% respectively in the top left and top right portions of the goal.

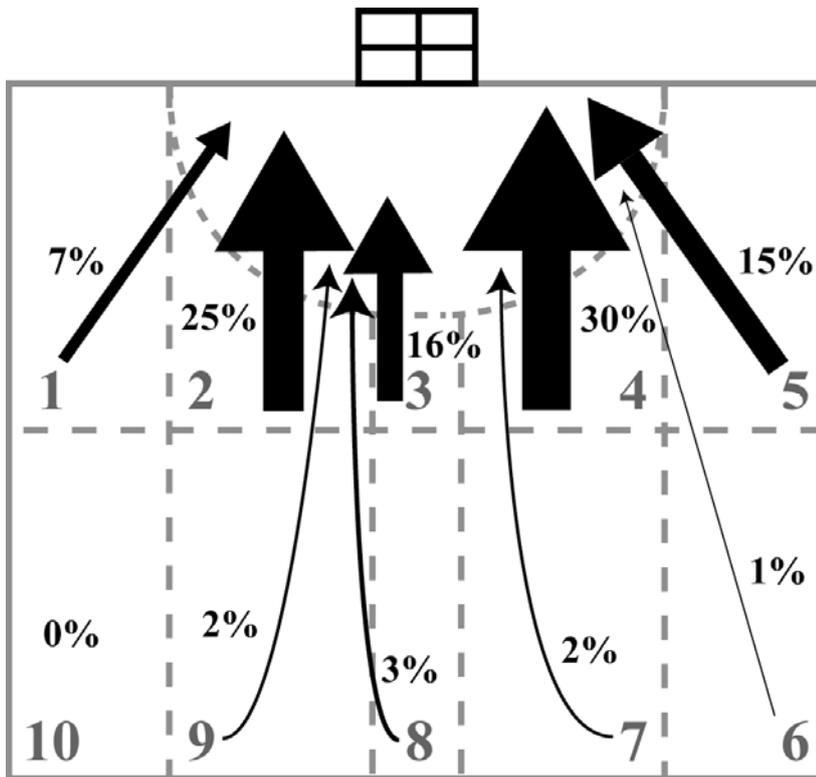


Figure 1. Area of pitch from where entry into D occurred (thickness of arrow is scaled to represent percentage of entries).

This study demonstrated that a higher proportion of goals arise from right hand offensive plays resulting in hit type shots that target the bottom left hand side of the goal. Based on these findings, coaches would be advised to encourage rehearsal schedules that promote styles of play that lead to quick repossessions high in the offensive play area, initiating right side attacks, ending with hit-strike shots across the goal keeper.