

VIDEO ANALYSIS OF SLIP EVENTS IN SOCCER DURING MEN'S WORLD CUP 2006

Katharina Althoff, Marco Hagen, Andreas Osterfeld, Ewald M. Hennig
Biomechanics Laboratory, University Duisburg-Essen, Germany
Email: katharina.althoff@uni-due.de

INTRODUCTION

Providing adequate traction is one of the most important features of soccer shoes. A lack of traction can result in losing the ball, missing the goal or even losing a game. To develop soccer shoes with good traction properties, it is necessary to explore how slip events occur. The purpose of this study was to analyze all slip events that happened during the men's world soccer cup in 2006.

METHODS

63 out of 64 games of the men's soccer world cup 2006 in Germany were analyzed. For the first time in world cup history all games took place on a standardized natural turf under comparable conditions. Every slip event within the view of the cameras was noted and characterized in the following way: 'playing position' (goalkeeper, defender, midfielder, striker), 'situation' (kick on goal, receiving the ball, pass, cross pass, header, action without the ball, tackling), 'range of slipping' (full slipping, incomplete slipping, instability), 'movement direction of the slipping leg' (forward, backward, outward, inward), 'movement pattern' (rapid acceleration / deceleration, backward movement, landing, feint, others). Furthermore the slipping events were recorded by zones of the playing field (penalty area, close to goal, central midfield, outside zone).

RESULTS AND DISCUSSION

Altogether, 845 slip events were recorded in the 63 games. Therefore, soccer players lost traction more than 13 times per game. Most of these slip events occur in the outside zones of the playing field, because many highly dynamic actions are performed in this area. The amount of slip events is highest in strikers, followed by midfielders (figure 1).

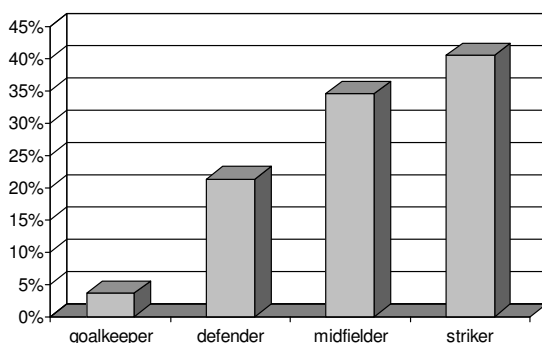


Figure 1: Percentile distribution of slip events per player.

Defenders do not slip that often. They try to avoid slipping because it may cause a goal by the opposing team. The most likely situation for losing traction is during a tackling. Interestingly, only few slip events occur while being in possession of the ball (figure 2).

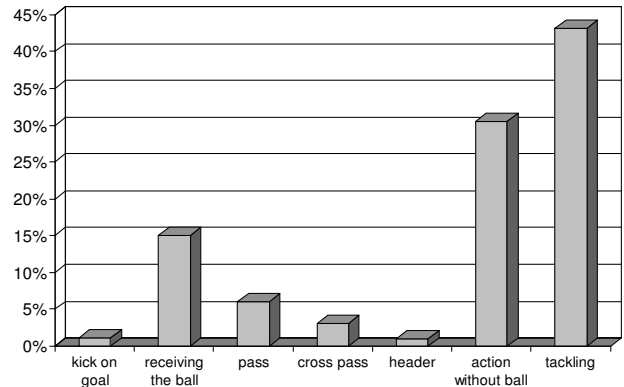


Figure 2: Percentile distribution of slipping situations.

During slipping the stance leg is moving most frequently backward or outward. This happens in 50% of all cases during deceleration movements; followed by 30 % during accelerations (figure 3). To sum up: most slip events occur among offensive players in the outside zones of the playing field, during tackling and while decelerating.

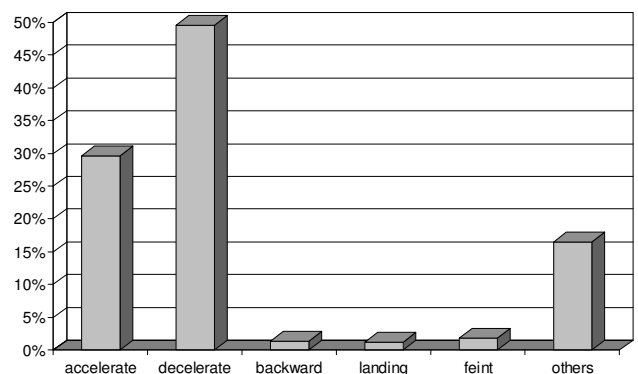


Figure 3: Percentile distribution of movement pattern during slipping.

CONCLUSIONS

We can conclude: the more offensive the player and the greater the distance to the own goal, the higher the probability of slipping. Whereas defenders, especially when they are close to their own goal, try to minimize the risk of losing traction. Slip events occur in three typical situations: deceleration while slipping outwards, acceleration while slipping backwards and deceleration while slipping forward. This information may prove useful for the development of soccer shoes, especially for the stud configuration of the outsole.

ACKNOWLEDGEMENTS

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