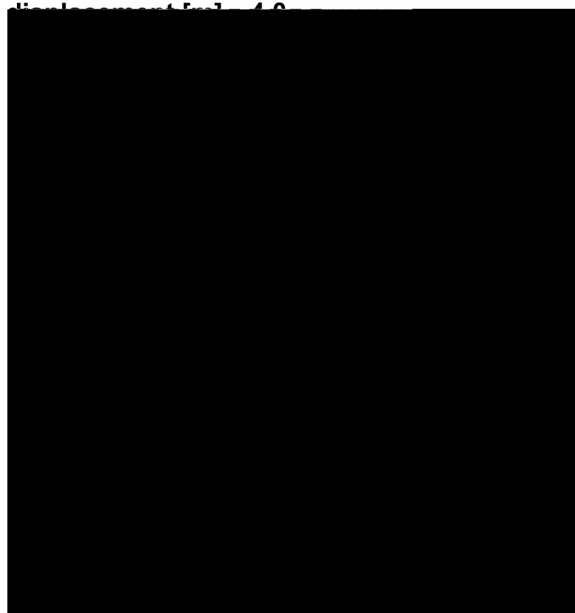


**Hiley, M.J. and Yeadon, M.R. 2003. The margin for error when releasing the high bar for dismounts. *Journal of Biomechanics* 36, 313-319.**

In Men's Artistic Gymnastics the current trend in elite high bar dismounts is to perform two somersaults in an extended body shape with a number of twists. Two techniques have been identified in the backward giant circles leading up to release for these dismounts (Hiley and Yeadon, 2003). At the Sydney 2000 Olympic Games 95% of gymnasts used the "scooped" backward giant circle technique rather than the "traditional" technique. It was speculated that the advantage gained from the scooped technique was an increased margin for error when releasing the h

direction of the release velocity makes an angle of  $90^\circ$  with the line joining the mass centre to the point of rotation), the release angle and velocity will be constantly changing as the gymnast approaches release. In the scooped technique, however, there is a flattening of the path of the mass centre leading up to release. This flattening gives a gymnast similar flight conditions over an extended release period, when compared with the traditional technique.



By having a larger release window a gymnast using a scooped technique is likely to find it easier to time the release than a gymnast using a traditional technique since the timing is less critical.

### **Related Papers**

[Hiley, M.J. and Yeadon, M.R. 2003. Optimum technique for generating angular momentum in accelerated backward giant circles prior to a dismount. Journal of Applied Biomechanics 19, 119-130.](#)

[Hiley, M.J. and Yeadon, M.R. 2005. The margin for error when releasing the asymmetric bars for dismounts. Journal of Applied Biomechanics 21, 223-235.](#)