A Vibrating Device to Assist Visually Impaired Athletes

Benjamin, Jason

Visually impaired athletes that participate in the 100 meter sprint event typically run with guides. The guide runs besides the athlete and is joined by a non-elastic rope. However, this technique poses several problems. Examples of these problems are the incompatible stride lengths, heights, reaction times, top speeds, running styles of the guide and athlete. The goal of this project was to create a device that could be worn around a visually impaired athlete's waist with sensors on their shoes which sends waves of vibration to the waist area allowing the athlete to run a sprint race without a guide. This device vibrated when in close contact with the boundaries of a lane on a track. A prototype was designed, constructed and tested. After preliminary tests, prototype 1 proved unreliable. Then 2 more prototypes were designed and constructed and used in field tests. Each visually impaired athlete was allowed to run six (6) trials over a distance of 30 meters three (3) trials with the vibrating device and three (3) trials then with a guide in a random order. The results of the third prototype proved to be the most significant after several analysis techniques and the times ran with this prototype were better than that with a guide. In conclusion the third prototype used in this investigation assist athletes to run faster compared to when running with a guide.

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