

研究報告

砲丸投げの新投法（ステップ・グライド投法）の動作学的研究

Kinesics study on a new glide technique of shot-putting (Step-Glide Technique)

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Abstract

The present study aimed as first step to conduct the kinesics analysis of the step-glide technique invented by Matsushita in comparison with the conventional glide technique. The Step-glide technique (for right-hander) is, as the 1st step, to perform gliding with the left foot, touching the ground by the right foot, then by the left foot. As a result of the experiment using one athlete with the experience of track and field sports (glide technique), it was observed that the body turn at the time of power-position was smaller than in the case of the conventional glide technique, that the initial speed of the shot put at the time of release became higher and that the improvement in the distance by 65 cm was recorded, compared with the conventional glide technique. As the 2nd step, for further improvement of the record, using one active athlete of shot putting, we examined (1)improvement of the glide speed (drawing motion of the left arm to the backward direction), (2)position of touching the ground with the left foot after glide, and (3)improved method of training. As a result, after about 2 years of the training, the record was improved from 12m03 to 14m07. It was suggested that this achievement was influenced by the increased speed of glide, the increased muscular strength and the smoothed motion of changing both legs.

キーワード 砲丸投げ、新投法、ステップ・グライド投法
shot-put, new method, step-glide technique

1. 研究目的

砲丸投げの世界記録をみると、男子の世界記録はアメリカのバーズが1990年に記録した23m12cmで、女子では旧ソ連のリソフスカヤが1987年に記録した22m63cmである。つまり現在まで、男子で19年間、女子で22年間記録が停滞している。この原因として、砲丸投げの技術と筋力との関係が限界にきている、もしくはドー

ピング検査の徹底により、薬物投与による筋力の向上が事実上難しくなったという主として2つの考えがある。

著者は前者の立場から、特に投擲技術の面について着目した。現在砲丸の投擲技術はオブライエン（グライド）投法と回転（スピンもしくはロータリー）投法がある。オブライエン投法（投擲方向とは正反対の後ろ向きに構え、いっ

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