

背面跳の分析的研究

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An Analysis of Movement in Backward-Roll Style High Jump

by

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The purpose of this study was to clarify characteristics of backward-roll style comparing with those of other forms in experiment I and to show how the curve approach of backward-roll style influences high jump in the experiment II

The subject was a high jumper, whose best records were 2.10 m in backward-roll style, 2.09 m in scissors form, and 1.98 m in belly-roll. And at that time he mainly used backward-roll style.

In experiment I, height of the center of gravity, speed of approach just before take-off, angle of backward lean at take-off, initial vertical velocity after take-off, projecting angle and change in height of the center of gravity while taking off, and height of the center of gravity at take-off were analyzed using 16 mm film.

And also vertical and horizontal forces at take-off and take-off time were measured by the force-platform.

In experiment II, speed of approach and maximal height of the center of gravity were analyzed from 16 mm film.

Followings were the result obtained.

1. Backward-roll style was more effective than other forms, for high jumper could get great initial vertical velocity by fast approaching speed when he jumped.

2. In backward-roll style, angle of backward lean at take-off, projecting angle of the center of gravity, height of the center of gravity at take-off, change in height of the center of gravity while taking off were smaller than those in other forms, so acquisition of this technique was seemed to be easier for high jumper.

3. The suitable pattern of approach in backward-roll style is to take a course like a straight-and-arc approach, which is produced by enough speed and adequate curve in approach run. [Proceedings of the Department of Physical Education, College of General Education, University of Tokyo, No. 7, pp. 69-75, 1972]

諸 言

近年、走高跳の記録の向上は目ざましいものがある。その原因については、トレーニング法の進

歩、フォームの変化、及びピットの改良（タータン、レコルタン、オールウェザーなどの出現）があげられるが、中でもフォームの変化が記録向上に大きく影響していると思われる。メキシコ・オリンピックでディク・フォスベリーが、背中でパー

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