NSA Photosequence 19: Long Jump

Carl Lewis

Sequence by Helmar Hommel
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The sequence shows his first attempt of 8.67m in the final of the Long Jump competition at the II World Championships in Athletics, Rome, 1987.

Carl Lewis (USA)
Born: 1 July 1961
Height: 1.88m
Weight: 80 kg
Best mark: 8.87m (1991)

Commentary
Igor Ter-Ovanesian

3 strides before the take-off board Lewis’ high sprinting speed has not decreased. In photos 1-3 he leans forward. His body posture seems to remain unchanged throughout all pre-take-off strides. His arm position in photos 1, 6, and 7 shows good relaxation, and the action of the lead foot is ideal, helping the athlete to maintain elasticity during the last strides before take-off.

Lewis prepares for take-off in the penultimate stride of the approach run (9-17). The significant lengthening by 40-45 cm of this stride is characteristic of his technique, as is the shortening of the last stride by 65-70 cm. Both of these stride variations come about as a result of Lewis’ preparation for take-off by lowering his centre of gravity.

The athlete’s left foot strikes the ground flat in the next to last stride (13, 14); there is a marked increase in the bending of the knee joint and the hip joint (compare 14, 15 with 1, 7). It should be noted here that the...
angle of the knee joint in photos 15 and 16 is practically the same as in photo 14, where the centre of gravity is at its lowest, so that the movement of the hip forward and upward in photos 14-16 is achieved mainly as a result of the elastic work done by the foot.

The lifting of the hip, which begins during the phase of the last stride (16, 17) allows Lewis to place the take-off foot on the board with a vertical 'up-and-down' movement rather than swinging the take-off leg through (18, 19). At the same time his body is angled slightly forward, well balanced, which will further assist in the active, 'attacking' take-off.

The last stride of the approach run is very fast and dynamic, practically without any flight phase (17, 18).

Photos 18-21 illustrate the well co-ordinated work of the arms and legs and the general elasticity at take-off.

At the moment of maximum flexion of the free leg at take-off, the angle of the knee is no greater than 14°. Simultaneous rapid straightening of the hip and knee joints and active foot work allow the jumper to direct his efforts forward and upward (20, 21). At the final phase of take-off the body posture is ideal. Shoulders, hips and foot are all aligned.

During the flight phase (22-34) Lewis is 'running in the air' for approximately 3.5 strides. The 'circular' movements of the arms co-ordinate with the leg movements, allowing the athlete to maintain his balance during the flight and the landing.