



NWA: Speed is the Key

A Comparative Study: Women's 100MH

Analysis by Russell Woodbridge: ATFCA Level 3 Hurdles

We are very appreciative of the time and expertise Russell has applied to this analysis .. the thoroughness of his comments have required they be presented on a sheet separate from the overhead presentations.

Athletes: Zofia Bielczyk (5): Poland .. 100H: 12.63; 100: 11.44
Lucyna Langer-Kalek (1): Poland .. 100H: 12.43; 100: 11.44

Both athletes are very good models; good sprint speed, and excellent differentials (1.19 and 1.01). Differences in technique are mainly due to height: (Bielczyk .. shorter stature).

Analysis Summary:

Take-off and Drive at the Hurdle;
Forward Lean, ensuring a "flat" parabolic path of the C of G;
Split between, timing and action of the legs;
Forward Lean at touchdown, and near perfect positioning for the Drive;
Re-Acceleration away from the hurdle to take full advantage of sprint speed.



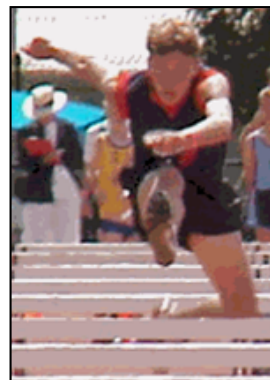
1. The Approach and Start of the Take-off Phase: Both hurdlers have eye focus on the hurdles; Bielczyk (5) has started a "double arms" forward action. Her take-off point appears to be forward of her C of G. The hips have dropped slightly. Langer-Kalek (1) has a distinct across the body arm movement in the running phase.
2. Bielczyk (5) forward lean has commenced with a well-flexed lead leg knee driven at the hurdle; the take-off point is now behind her C of G. Langer-Kalek (1) has a good "hips high" position. The "cut back" of her take-off (trail) leg will place the take-off point behind the C of G.
Note: Bielczyk's left arm and its subsequent positions.
3. Bielczyk's (5) forward lean has continued. The take-off leg is about to break ground contact, but is fully extended and in alignment with the trunk and head. The lead leg position is very good. The lead arm although flexed across the body is essentially forward.
Note: The excellent foot to the buttocks, knee at the hurdle of Langer-Kalek's (1) lead leg.
4. Langer-Kalek's (1) forward lean has commenced; with the exception of the lead arm movement there are striking similarities to Bielczyk (5) in the "about to break ground contact" position. Langer-Kalek lead leg movement may be faster due to the "tighter fold" of the leg at the hurdle.
Note: The lane positioning of both hurdlers.
5. Bielczyk (5) shows good form at this point: chin is over the lead leg knee; good forward lean; eyes focused on the next hurdle; lead leg with "toes up"; good delayed trail leg. The trail (left) arm appears too high, as a consequence of the "double arm" forward technique. Langer-Kalek (1) is driving well at the hurdle; good alignment from take-off point to the trunk and head. Good lead leg timing.
6. Langer-Kalek (1) forward lean is continuing. Good "toes up" position of the lead leg. Good delayed trail leg; lead arm slightly over-extended, but under control. Bielczyk (5), instead of "cutting down" the lead leg from Photo 5, has over-extended marginally.
7. Langer-Kalek (1) lead leg has slight over-extension. Her forward lean is not to a "chin over the knee" position, but is correct for a tall female hurdler. Note the difference to the shorter Bielczyk. Bielczyk (5) lead leg has started its downward thrust. The trail leg is slightly open. Good foot position.
8. Bielczyk's (1) trunk is lifting in reaction to the downward lead leg movement. Langer-Kalek (1) is displaying a good split, and a well-flexed trail leg. Her lead arm is starting to sweep back.

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Comparative Study: Continued

9. Langer-Kalek's (1) trunk has commenced to lift in reaction to the downward leg movement. Her trail leg knee and foot relationships in this and the next sequence show perfect form. Bielczyk's (5) "cut down" of the lead leg is a good model.
10. Both hurdlers have maintained "forward lean" with shoulders square. Although there are minor differences, both their lead arms are working effectively. Note the "toes up" of their lead legs.
11. Touchdown for both hurdlers is on a straight lead leg. Their trail legs are moving to a high knee position in front of the hip. Both have good control of the lead arm, coming to good positions to drive forward. Bielczyk's trail arm has recovered to a "running action" position.
12. Good driving positions into the first step, re-accelerating away from the hurdle. This was achieved by the touchdown behind the C of G, and, a "forward lean at, across and away" from the hurdle. The "toes up" feet means there will be correct ground contact.
13. A better illustration of Langer-Kalek's (1) very good drive away from the hurdle. Note the alignment of leg, trunk and head. Both hurdlers have the foot under the knee in the initial part of the descent of the trail leg, ensuring a forward pointing, "toes up" foot ground contact.
14. Langer-Kalek's (1) lower right leg appears slightly over-extended, but a further sequence would see correct ground contact. There is some trunk/shoulder rotation due to the arm action referred to in Photo 1. Bielczyk's (5) arms have a more forward movement, thus less shoulder rotation. Her double arm hurdle action is not often seen or preferred.

*Russell Woodbridge
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You may like to apply your thoughts to the execution depicted in the photographs above.

For a copy of the images analysed contact NWA

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