

Commentary on photosequences 36 and 37

by Herbert Czingon

Herbert Czingon is the team leader for the German pole-vaulters (male and female) and the Director of the DLV Coaches School at Mainz.

1 Monika Götz *

1.1 Preliminary remarks

When clearing 3.67m, Monika Goetz not only won the German Pole Vault Cup, she also set a new national record for the female age-group of 14 years. With this performance, she also would have been among the top 5 male athletes of the same age-group throughout the past few years, and often she even would have been top vaulter of the year! Most likely (exact statistical data are not available) this performance is a world record for this age group as well.

Monika Goetz is endowed with numerous positive prerequisites for high-level pole vaulting: she is quite tall (1.75m when she set the record, today 1.80m), very fast and possesses enormous take-off power (100m-P.B. 12.28sec, long jump 5.28m, and high jump 1.70m). In addition, she shows very aggressive behaviour during the plant/take-off phase. On the other hand, her movements provide a number of possibilities for improvement.

1.2 Run-up

During the run-up, some of the major problems of Monika's vaulting technique become obvious: The grip is unnecessarily wide impeding the ensuing plant motion (*photo 1*). Because the run-up is very short (12 strides only), she leans forward far too much at the start of the plant phase; in an attempt to accelerate the plant. Also, she is carrying the pole too flat: on the third from last stride before take-off, it already is almost horizontal.

1.3 Plant/take-off until "C" position **

The premature lowering of the pole is continued at the transition of the third last to the penultimate stride (*photos 5-7*). The tip of the

* With co-operation of Thomas Weise, German national coach for youths and juniors.

** The "C" position is the position after the take-off with the maximal body flexion to the back (seen from the left).

pole touches the ground for the first time when the penultimate ground contact is made (*photo 8*: touch-down of the pole in front of the box induces a negative bending of the pole).

The continued marked forward lean (*photos 9-13*) is accompanied by an incomplete upward extension of the right arm. The take-off leg is brought down with a "passively stabbing" (not active) foot plant (*photos 10-11*), the take-off point is way before the upper grip hand (by 1-2 feet length, *photo 14*).

The take-off position which initially is quite good (*photo 15*) is resolved passively very quickly (*photos 16/17*): the take-off leg heel flicks up to the buttocks, the legs swings forward passively.

1.4 Upswing into the "L" position

This passive swinging – not "whipping" down of the take-off leg can be observed – does not allow the "C" position to be converted into a dynamic starting position for the upswing, but it is passively resolved: the upswing is interrupted by a halt, the hips remain low, head and shoulders cannot be lowered. Rotation axis for swinging up is not the diametric shoulder- but hip axis.

1.5 Extending into the "I" position

The pole starts to straighten while the hips are still in a lowered position (*photos 19/20*, actually commencing in *photo 20*). Hip extension and therefore adoption of the "I" position occurs far too late (*photos 23/24*): the pole is almost completely straightened, and the extension impulse has disappeared. This delay in this action causes the right shoulder to be twisted inward towards the pole too late, and it is impossible to clear the bar in a "prone-down" position (*photos 25/26*).

1.6 Analysis of causes

During the upswing phase to the "L" position, essential elements of the movement (swinging leg whip, active forward arm-pull) are missing. The consequences of these faults are those previously described for the plant/take-off phase. They result in the vaulter's movement lagging behind the dynamics of the pole: it bends and straightens with its own dynamics, and the two movements are not synchronised optimally.

1.7 Training suggestions

Essential training methods to eliminate these basic faults occurring during run-up and plant/take-off phases, can be summarised as follows:

- acquiring and perfecting of the movements when hanging at gymnastic apparatuses (horizontal bar, rings, rope, trapeze and so on)
- drills for carrying and planting the pole
- sprint drills and co-ordination runs with the pole up to the preparation of plant and take-off
- plant exercises with a partner in order to get a feeling of the exact final positioning of a correct take-off.

These proceeding should allow a quick technical improvement which in turn results in an optimal grip-height and stiffness of the pole.

2 Nastja Ryshich ***

2.1 Preliminary remarks

When she cleared 4.15m, Nastja Ryshich set a new world junior record. She finished second in the German Championships and found herself ranked eighth in the world in 1996.

In her run-up for this jump, she equalled her previous maximum speed of approximately 8m/sec and used a Spirit pole 4.30/70, 19.0 flex (height/weight: 170cm/ 58kg) with a grip of approx. 4.15m.

At the time of competition Nastja was very fit. She had improved steadily, via her indoor performance of 4.00m, on her way to this world-class performance.

2.2 Run-up

Nastja shows a good basic running technique and she is also endowed with excellent basic speed. These abilities are reflected in a highly reactive running technique, an active foot plant, and an increase in frequency in the last strides.

2.3 Pole plant

Nastja commences her plant movement very early (between the fourth and third from last ground contacts, *photos 3-4*). The accompanying lowering of the pole results in her opening the left shoulder (*photos 4-5*).

This is an inconspicuous but striking technical error causing a loss of control of the right side of the body in the course of the plant/take-off

complex, and it finally results in her turning to the right when clearing the bar (cf. *photo 25*).

An initial backward lean occurs prior to take-off (due to the upward force of the pole). This ensues a stabbing touch-down of the foot for the take-off, in combination with a slight loss of speed.

2.4 Take-off

Another effect of the backward lean is the extension of the last step of the run-up; the exact point of the take-off is too close to the box by approximately one foot length. For beginners, this is not necessarily a problem, but for elite vaulters using much stiffer poles, it may become dangerous! The take-off is initiated with a short touch-down, minimum bending of the hips, knee and foot are proof of well-developed special take-off power (*photos 11-14*) and correct technical preparation. But because they are lowered, the hips are brought forward too far after take-off. This prejudices the following upswing phase.

2.5 Upswing to the "L" position

The upswing is a rotation about a stable shoulder/arm axis, with the vaulter able to see the upper grip hand (*photos 18-20*). Because the hips are brought forward from a low position, it is somewhat delayed, but still in time to make this jump.

2.6 Extension into the "I" position

There is good hip extension with satisfactory control of the pole straightening (*photos 22-23*). As she lacks strength, Nastja has some trouble continuing with her jump. This is reflected in a rather ineffective arm-pull to clear the bar (*photos 23-25*). Good stability of hip and legs allows a reasonable clearance, the head being thrown back at first, and then controlled somewhat better (*photos 23-25*).

2.7 Training suggestions

For Nastja, the practising of gymnastic exercises will improve her movement on the pole. Additionally, her running technique when carrying the pole should be improved, especially with regard to the transition from plant to take-off (last few strides, controlling of the shoulder). Certain long-jump training drills will further improve the take-off technique.

***With co-operation of Vladimir Ryshich, Nastja's father and personal coach.





4

3

2

1



8

7

6

5



1

2

3

4

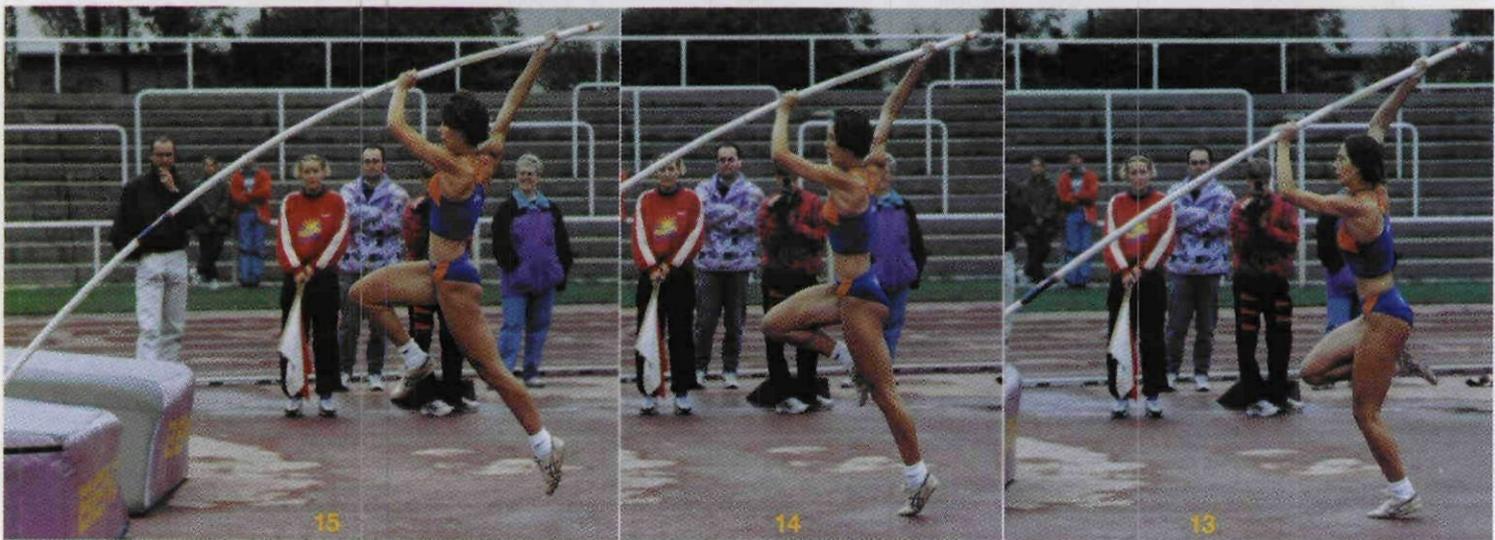
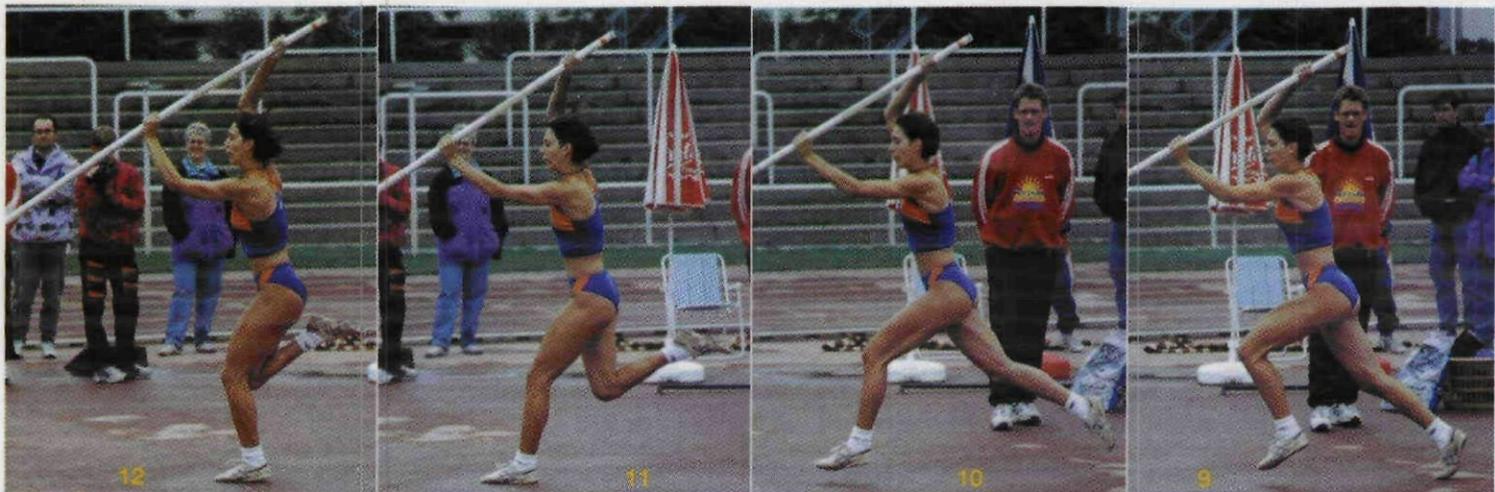


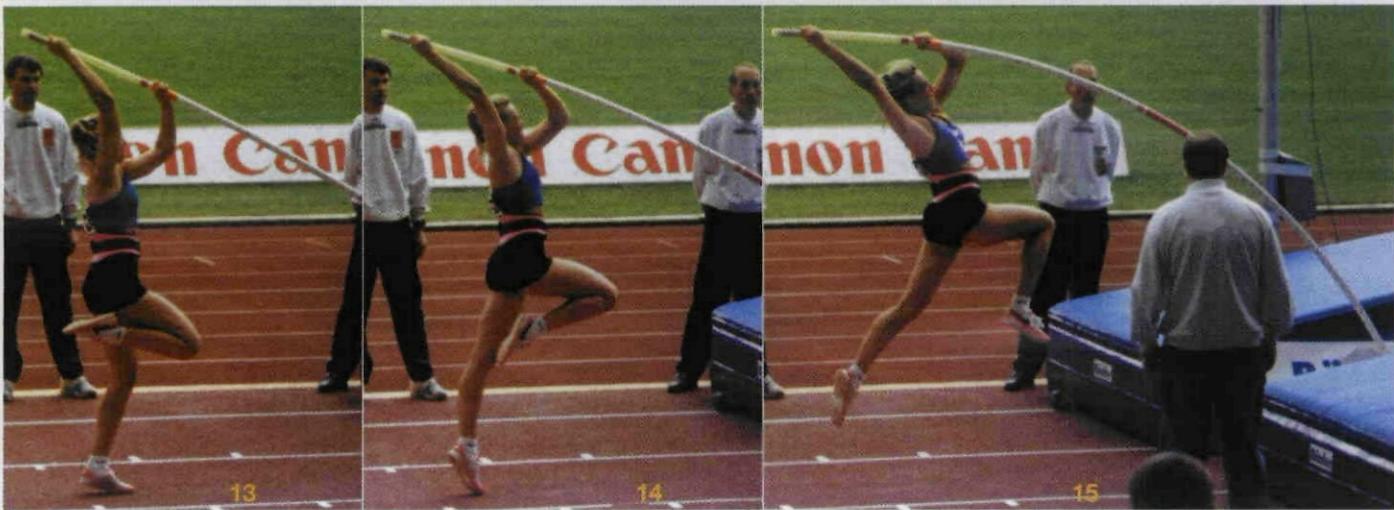
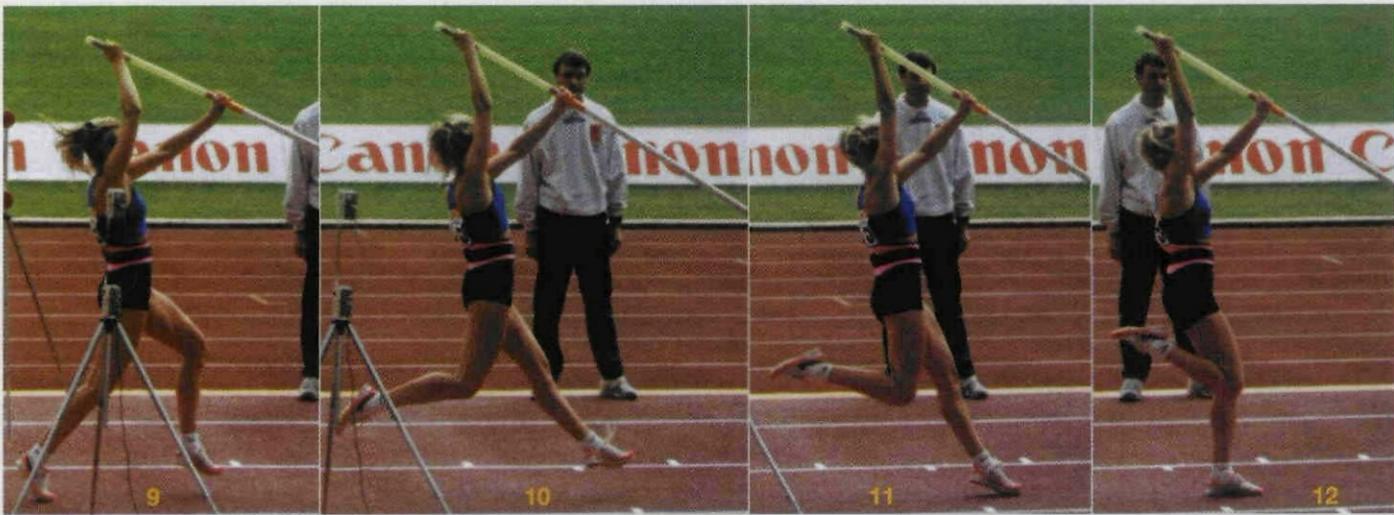
5

6

7

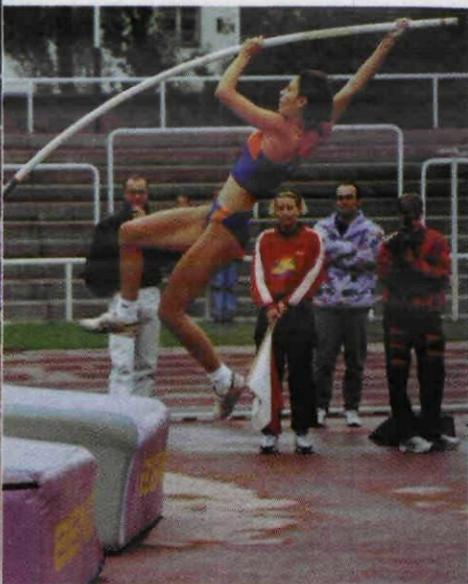
8







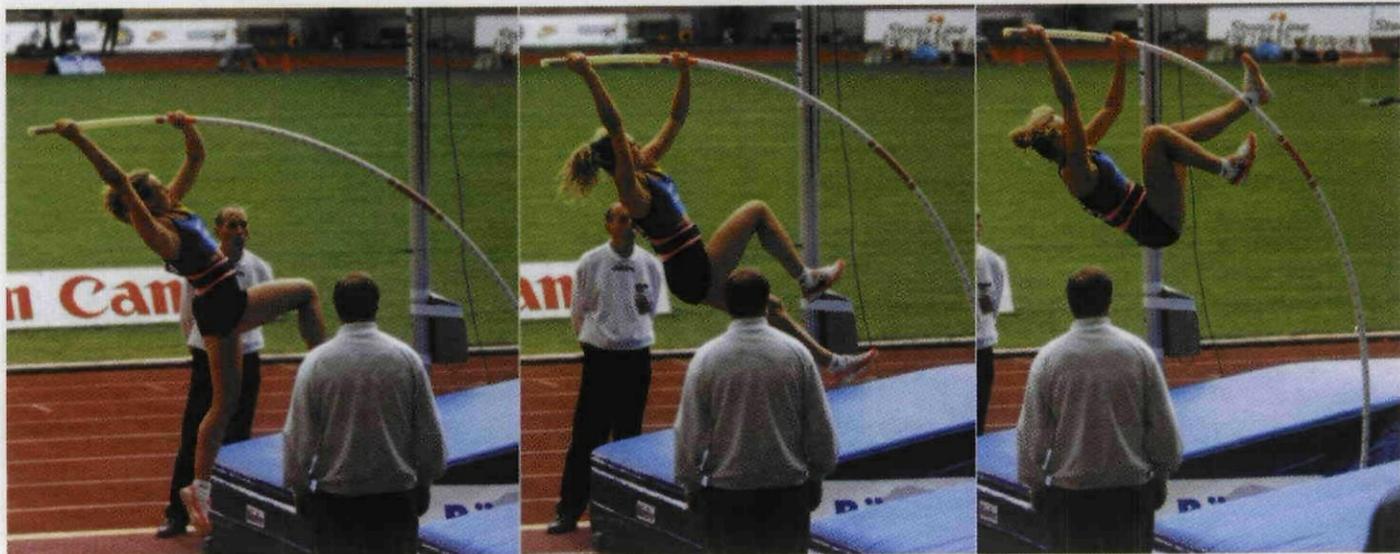
18



17



16



16

17

18



23



22



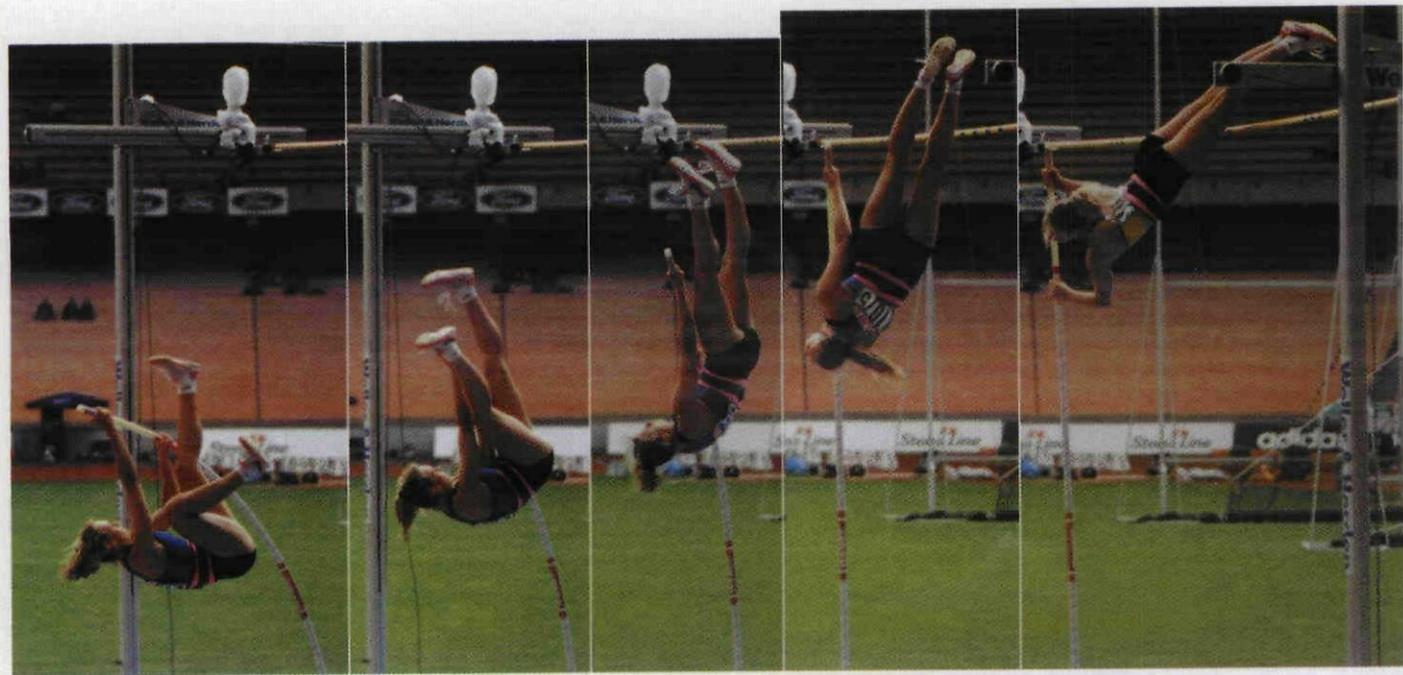
21



20



19



19

20

21

22

23



26

25

24



24

25

26



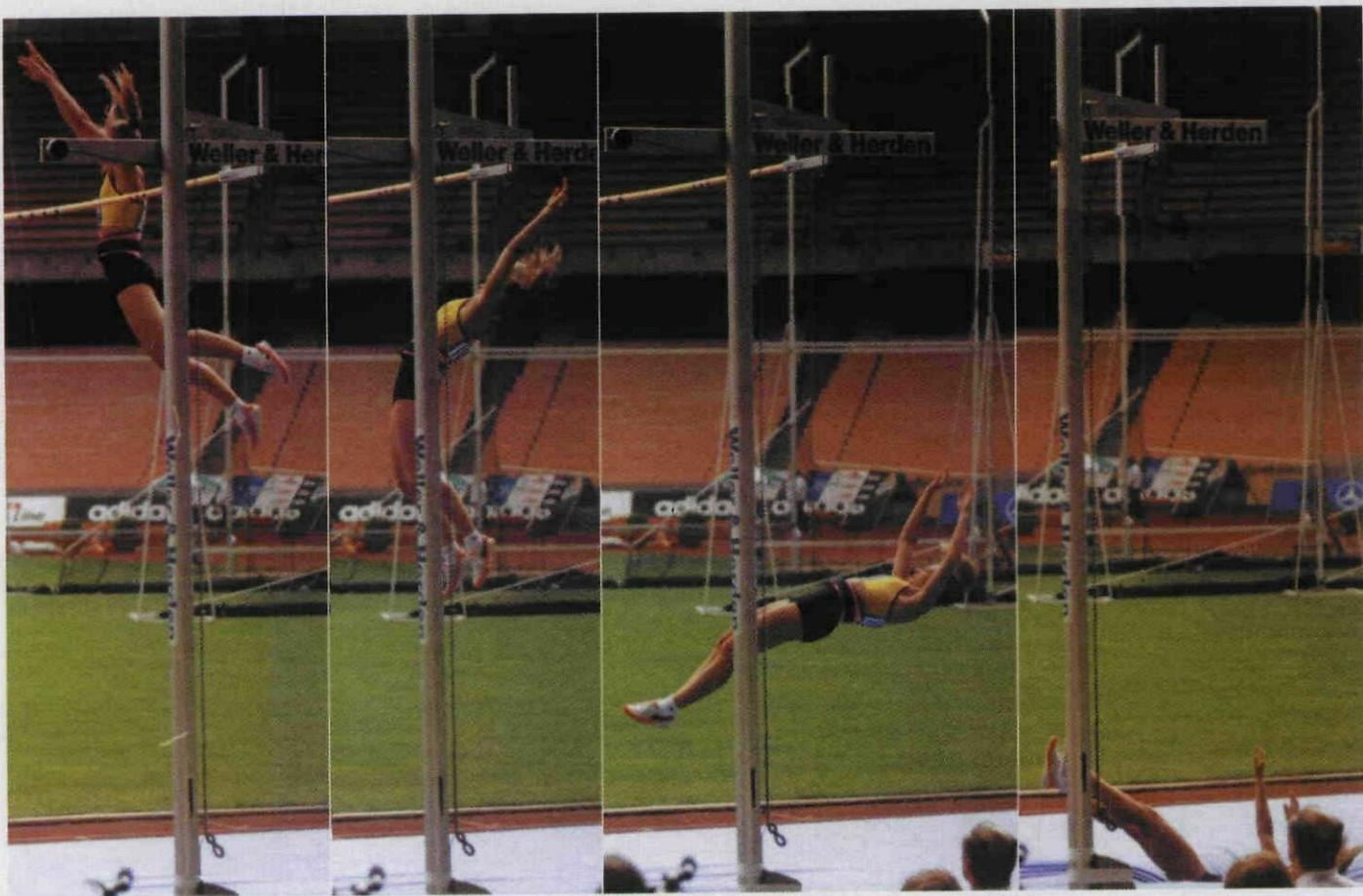
30

29



28

27



27

28

29

30



WOMEN'S Long Jump
Final

1	2000	KLINGB, C.	HRG	7.12	HRG
2	2001	TRIP, Miana	USA	7.02	HRG
3	2791	CHEUNG, Tsz Nga	CHN	6.97	HRG
4	2008	JOINTNER, Mik	USA	6.97	HRG
5	2022	MALCZAKOWSKI, A.	POL	6.89	HRG
6	2001	JOVHEA-KER, J	HRG	6.89	HRG
7	2113	PRANDOSHEVA, Iv	BUL	6.81	HRG
8	2020	MULOMBA, Nicol	HRG	6.78	HRG

Igor Pogajpowich, Photo: Allsport / Mike Powell