NSA Photosequence 20 – Distance running

Yobes Ondieki
Dieter Baumann

Sequence by Helmar Hommel
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The sequence shows Yobes Ondieki (KEN) and Dieter Baumann (GER) in the 3000 metres at the ASV Köln international meeting, Cologne, 8 September 1991. Baumann finished first in a time of 7:33.91 min., and Ondieki second in 7:34.74 min.

Yobes Ondieki (KEN)
Born: 21 February 1961
Height: 1.70m
Weight: 55 kg
Best marks: 1500 metres - 3:34.36 min. (1990)  
3000 metres - 7:34.74 min. (1991)  
5000 metres - 13:01.82 min. (1991)  
10,000 metres - 28:25.44 min. (1983)

World Champion 5000 metres 1991.

Dieter Baumann (GER)
Born: 9 February 1965
Height: 1.78m
Weight: 60 kg
Best marks: 800 metres - 1:45.40 min. (1990)  
1500 metres - 3:34.93 min. (1991)  
3000 metres - 7:33.91 min. (1991)  
5000 metres - 13:15.52 min. (1988)  
10,000 metres - 29:03.33 min. (1989)

Silver medallist in the 5000 metres at the Games of the XXIVth Olympiad, Seoul, 1988; 4th in the 5000 metres in the III World Championships in Athletics, Tokyo, 1991; European Indoor Champion 1989.
Commentary
by George Gandy

George Gandy is the Senior British National Event Coach for 3000 – 10,000 metres. He lectures in athletics and sport biomechanics at Loughborough University, Great Britain, where he has coached several athletes to success in major international championships.

The first impression of Yobes Ondieki and Dieter Baumann is that, apart from exhibiting an equally high standard of performance, they could scarcely be more different. The former, an aggressive front runner, was born in the Kenyan highlands with the associated physiological advantages of altitude. His talent as an endurance-based athlete was developed in the American universities’ programme; he is now self-coached. The latter, more of a ‘sit-and-kick’ man, emerged from the relative affluence and structured, systematic approach of the former Federal Republic of Germany. He possesses a high level of basic speed for a 3000-5000 metres runner, and is even now reluctant to grind out long repetitions at a fast pace. He moved up to longer events only after years of specialized preparation for the 800 and 1500 metres.

This 18-frame Photosequence encompasses a single complete running cycle (i.e. two full strides) for each athlete. This takes just over half a second in the final stages of a very fast 3000 metres. Not surprisingly, therefore, the two show some marked differences in style and technique; differences which I shall describe with specific reference to the conventional phases of drive, flight and support.

Photo 1 shows Baumann commencing the drive from his left foot. There is a strong forward action of the right thigh (1 and 2), which is initiated from a well-flexed position. This facilitates a quick recovery due to the small moment of inertia about the hip axis. By photo 3 the right lower leg has begun to swing forwards and propulsion from the left leg is completed with an almost total extension at knee and ankle.

The powerful rotation whereby the right side of the lower body is driven forwards is matched by a counter-rotation of the arms and the shoulders in the horizontal plane. Shoulder rotation is not excessive but could be reduced, if not through increased upper body development then through some adjustment of the arm action (for example ‘wider’ elbows, more movement across the body, and/or some lowering of the forearm to lengthen and therefore increase lever efficiency in this respect). In fact, during the drive from the right leg in photos 10-12, the forearms are clearly carried lower and shoulder rotation is less evident. Otherwise, the body movements revealed in these photographs essentially mirror those described while the drive is from the other leg.

For Yobes Ondieki, in photos 3 and 11, the drive phase begins with an emphatically greater ankle flexion in the supporting leg (note especially photo 3). This is indicative of unusual flexibility and/or a possibility of greater stress on ankle joints and soleus (achilles) tendons. Only a faster shutter speed, showing the Kenyan’s action between photos 5 and 6, could confirm or reject the impression that the drive from Ondieki’s right leg ceases prior to complete ankle extension. There is little shoulder rotation; this could be due to a wide arm action relative to that of Baumann.

The German’s flight phases (4, 5, 6, 7 and 13, 14, 15) feature a relatively high trajectory, outcome of a drive which propels him not only forwards but also higher off the ground than Ondieki’s (6, 7, 8 and 15, 16, 17). The general shape and position of Baumann’s lower body in photo 4 could almost be mistaken for that of Sebastian Coe, except that Coe’s rear-leg drive would surely have lacked quite such an upward component.

The two athletes provide excellent examples of the backward movement of the leading foot relative to the knee prior to ground contact (Baumann in photos 7 and 16; Ondieki in photos 8 and 17). In this way
negative horizontal impulses are reduced and therefore speed is maintained more effectively. In both cases, too, the leading foot makes contact with the ground in a classically 'correct' position, i.e. on the outer edge, thus effectively absorbing impact. A rolling forward-and-inward (pronation) action then occurs, which transfers weight across the whole of the forefoot in the support and drive phases.

In photos 1, 2, 9 and 10 Ondieki allows his support leg to bend substantially at the knee, a softening action which may serve to reduce horizontal retardation. A corresponding sinking at the hips is actually the opposite of recommended technique for quality sprinting. Baumann appears to 'give' somewhat less at the knee and hips (particularly in photos 8 and 9), and perhaps harnesses better the plyometric potential of the calf muscles, the quadriceps and the gluteals. It is as if the African uses the early part of the support phase as a recovery period in a more economical, distance-orientated action; while Baumann, exhibiting a more speed-effective ground-contact action works hard from earlier in the support phase and allows himself the luxury of a recovery only during a higher, longer flight.

The entire sequence illustrates remarkable maintenance of some excellent technical qualities, despite the severe pressure which both athletes must have been experiencing by this stage of the race. Impressive composure and control is revealed, particularly in the steady carriage of the head and the general lack of undue tension in the upper body. Ondieki does angle his head slightly backwards in the support phases (1-3 and 8-10), and seems to stare far ahead. Whether this is an indication of wavering concentration or is simply his natural and preferred style is open to conjecture.

There are also some signs of tension in the shoulders of both runners (Ondieki in photos 7 and 8; Baumann in photos 11 and 12) and in the neck of Baumann (photos 1, 11 and 18). However, the fixed forward and downward gaze of the German hints at exceptional concentration. It is easy to be wise after the event and also to read too much into individual frames, but there is something in Baumann's very positive...
expression which suggests a conviction that he is about to score a memorable victory on home ground. The predator was about to pounce; and the quarry could surely sense it.

In so far as it is possible to extrapolate from this Photosequence, the different actions of these athletes may be seen to reflect their respective backgrounds and their preferred methods of racing. Baumann's technique, as illustrated in these photographs, would appear to be less appropriate for an economical completion of the whole race distance. On the other hand, the Kenyan might be even more formidable were he to operate more like the German in the final lap.

In my analysis of this sequence I have dwelt on the technical differences between the two athletes. It is however necessary to point out that this may ultimately be misleading. A remarkable general similarity in these athletes' sequential positions tends to be disguised by the asynchronous nature of the combined action photographs.