TIME ANALYSIS

FOR THE

IAAF World Championships

LONDON 2017

5,000 m Women’s

Dr Brian Hanley and Dr Athanassios Bissas
Carnegie School of Sport

Stéphane Merlino
IAAF Project Leader
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INTRODUCTION

The women’s 5000 m final was held on the evening of August 13th, the final day of the championships. The average speeds for each of the top eight athletes over every 400 m segment (and last 200 m) are included in this report, as well as a graph of each of these athletes’ positions at each 400 m split (and last 200 m). The split data were provided by SEIKO. The results of the final are shown below.

Table 1. List of abbreviations used.

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Figure 1. The mean speeds for each 400 m segment (and last 200 m) for the top eight athletes.

Figure 2. The position of the top eight athletes after each 400 m segment (and last 200 m).
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**Note:** The table above provides race times for various distances, including 100m, 200m, 300m, 400m, 500m, 600m, 700m, 800m, 900m, 1000m, 2000m, 3000m, 4000m, and 5000m. The times are listed for each distance in minutes and seconds.
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COACH’S COMMENTARY

The women’s 5000 m final was characterised by both extreme variations of pace and a remarkable consistency of pace within the same race. It is the unpredictable nature of global finals that is a challenge to athletes and coaches. But what is predictable is that finishing speed normally determines the medals, if not the exact finishing order. To win, athletes need to finish fast from the correct position in the race. Similarly, slightly lower ranking athletes need to ensure they put themselves in a position where they have not started too fast, but have kept up with their rivals for the silver or bronze medals.

In this race the analysis indicates that the first 1600 m included laps run in times as slow as 82 s and as quickly as 65 s. Coaches will be aware that athletes typically learn in training to be physiologically economical at particular paces. The challenge is to prepare for both extremes, and all those between.

After 1600 m the race pace was remarkably consistent. Six laps were run within one second at around 69 s per lap, with Obiri and Ayana more even-paced than their rivals during the mid-section of the race. Therefore, almost half the race was even-paced running which, combined with the extreme variation of pace over the first 1600 m, indicates the need for athletes to be adaptable in their psychological preparation for the tactics in global finals.

Finishing speed is, as with the men’s race, a key requirement. Bronze medallist Hassan ran the fastest last 1000 m, in 2.42:04. As a measure of how variable pace was in this race, this 1000 m was only 0.003 s slower than her time for the opening 800 m. The fastest 400 m in the race was also from Hassan at 58.21 s (the last 400 m). Despite these fastest sections, she failed to win, having been simply too far behind the other medallists with one lap remaining. Obiri allowed Ayana to lead through most of the race, only overtaking her on the last lap. Ayana’s finishing 200 m was just under four seconds slower than Obiri’s, and might have been a result of fatigue from her exertions eight days earlier in the 10,000 m final. The women’s races often show a large spread between the finishing times of the finalists and this race was similar. In endurance races, the distribution of effort and optimum positioning are essential in maximising results.
CONTRIBUTORS

Dr Brian Hanley is a Senior Lecturer in Sport and Exercise Biomechanics. Brian’s particular research interests are in the area of elite athletics, especially race walking and distance running, as well as the pacing profiles adopted by endurance athletes. He is also interested in musculotendon profiling of athletes to appreciate internal limiting and contributing factors affecting performance, in addition to longitudinal studies measuring the technical development of junior athletes as they progress to become senior athletes.

Dr Athanassios Bissas is the Head of the Biomechanics Department in the Carnegie School of Sport at Leeds Beckett University. His research includes a range of topics but his main expertise is in the areas of biomechanics of sprint running, neuromuscular adaptations to resistance training, and measurement and evaluation of strength and power. Dr Bissas has supervised a vast range of research projects whilst having a number of successful completions at PhD level. Together with his team he has produced over 100 research outputs and he is actively involved in research projects with institutions across Europe.

Malcolm Brown has coached at five Olympic Games in two different sports. He was National Event coach for Endurance with British Athletics from 1991 to 2000. He then established the Leeds Triathlon centre in 2003 and coached the Brownlee brothers, with colleagues from British Triathlon, to four Olympic medals. In the Rio Olympics, his athletes from Leeds finished 1st, 2nd, 3rd and 4th across the men’s and women’s races.