

### **A proposal to change the women's hurdles events**

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*Translated from the original Spanish by Victor Lopez.*

#### **1 Introduction**

The sprint hurdles race, more or less, as we now know it, was 'invented' at Oxford University in 1864. The distance was 120 yards, with an approach and finish of 15 yards and a 10 yards spacing between 10 hurdles, 3 foot 6 inches in height.

These measurements formed the basis for the event when it was included in the first modern Olympic Games, held at Athens in 1896. There, measurements became the metric equivalents, 110 metres distance, 10 hurdles 106.7cm in height and 9.14 metres apart, a distance from start line to first hurdle of 13.72 metres and from last hurdle to finish of 14.02 metres. The first gold medal for the Olympic event was won by Thomas Curtis (USA) with a time of 17  $\frac{3}{5}$  sec.

From that date to the present, the rules of this event have not been modified despite the progress made in the construction of the hurdles, in the quality of the track surface, in the quality of the shoes, in the selection of the athletes and in the specific training methodology and planning.

The 400 metres Hurdles for men was incorporated in the programme for the 1900 Olympic Games, held in Paris. The winner on this first occasion was Walter Tewksbury (USA) with a time of 57.6 sec.

A hurdles event for women was first included in the 1932 Olympic Games, held in Los Angeles. This was an 80 metres race over eight hurdles, 76.2cm high and eight metres apart. There was a distance of 12

metres from start line to the first hurdle and from the last hurdle to the finish.

Women's hurdling developed so rapidly in the 1960's that a change in the structure of the event became inevitable. In 1969 the distance of the women's race was changed to 100 metres and the number of hurdles to 10, 84cm in height. The Munich Olympic Games in 1972 included this event, which was won by Annelie Ehrhardt (GDR) in 12.59 sec. Later on, the 400 metres Hurdles was added (10 hurdles of 76.2cm) to the women's timetable and the first Olympic Champion in that event was Nawal El Moutawakil (MAR), with a time of 54.61 sec. in Los Angeles in 1984.

However, although the women's event has been modified over the years, this article will show that there is still an obvious need for further technical changes in both women's events. This is because hurdle heights are closer to participating athletes' centres of gravity in men's events than they are in women's.

## 2 Proposals for technical modification

- Raise the hurdle height in the 100 metre event for women from 84.0cm to 91.4cm.

- Increase the height of the hurdle in the women's 400 metres from 76.2cm to 84.0cm

### 2.1 *Changing the hurdle height in the Women's 100 metres event*

The proposal is based on analysis carried out by comparing competitors in the 100 metres Hurdles race for women and the 110 metres Hurdles race for men. The intention was to compare the technical demands of the events.

The athlete's height and the hurdles height was compared. It could be seen with the naked eye that the current 84.0cm height of the women's hurdles reaches, more or less, the level of the athlete's hip joint, whereas the 106.7cm of the men's hurdle reaches a higher level, more or less, the level of the belly button.

This visual impression can be confirmed by considering the results of a detailed study of the 100 and 110 metre Hurdles events at the 1988 Olympic Games held in Seoul (See Table 1). Unfortunately, we do not have enough information on the sprint hurdles entrants at the 1992 Olympic Games in Barcelona to make a full comparison. However, we do know the average heights of the eight finalists and medallists in both events.

**Table 1: Details of 1988 Olympic Games sprint hurdles competitors.**

<b>Women's 100 metres Hurdles</b>	
number of entered athletes	40
number of entered athletes with height details	37
average height of the eight finalists	172.12cm
average height of the three medallists	173.0cm
average height of the 37 athletes	170.35cm
<b>Men's 110 metres Hurdles</b>	
number of entered athletes	44
number of entered athletes with height details	41
average height of the eight finalists	184.50cm
average height of the three medallists	185.33cm
average height of the 41 athletes	184.09cm

In the 1988 Olympic Games, bearing in mind that the height of the women's 100 metres hurdle is 84.0cm, the height of the hurdle represented 49.31% of the height of the 37 athletes entered, 48.80% of the height of the finalists and 48.55% of the height of the medallists. In the 1992 Games we know that the average height of the eight women finalists was 169cm and the average height of the three medallists was 170.3cm. Thus, the hurdle height represented 49.7% of the height of the finalists and 49.3% of the height of the medallists.

In the men's event in the 1988 Olympic Games in Seoul, the height of the hurdle was 106.7cm, which represents 57.96% of the height of the 41 entered athletes, 57.83% of the height of finalists and 57.57% of the height of medallists.

In 1992 the average height of the eight male finalists was 186.3cm and of the medallists was 186.6cm. The height of the hurdle represents 57.27% of the height of the finalists and 57.18% of the height of medallists.

If we raised the height of the hurdle in the 100 metre for women from 84.0cm to 91.4cm, the new height would represent 53.65% of the average height of the sprint hurdlers in the 1988 Olympic Games. It would also represent 53.10% of the aver-

age height of finalists in the 1988 Games and 54% of the average height of finalists in the 1992 Games.

Raising the hurdle height would increase the technical demands of the women's race, making them more like those of the men.

## 2.2 *Changing the hurdle height in the Women's 400 metres event*

This proposal is based on the same kind of analysis that was carried out for the sprint hurdles events. When comparing the height of participants to the height of the hurdle with the naked eye it is clear that the height of the men's hurdle (91.4cm) reaches the hip joint of most participants while the height of the women's hurdle (76.2cm) reaches just the top third part of the thigh bone in most participants.

This visual impression was confirmed by the results of a study made of men and women participants in the 400 metre Hurdles at the 1988 Olympics in Seoul (Table 2).

The height of the women's hurdle 76.2cm represents 44.67% of the height of the 35 entered athletes, 44.14% of the finalists and 44.13% of the medallists in the 1988 Games. In the 1992 Games the average height of

**Table 2: Details of 1988 Olympic Games 400 metres hurdles competitors.**

<b>Women's 400 metres Hurdles.</b>	
number of entered athletes	37
number of entered athletes with height details	35
average height of the eight finalists	172.62cm
average height of the three medallists	172.66cm
average height of the 35 athletes	170.57cm
<b>Men's 400 metres Hurdles.</b>	
number of entered athletes	43
number of entered athletes with their heights	39
average height of the eight finalists	183.25cm
average height of the three medallists	185.0cm
average height of the 39 athletes	181.28cm

the finalists in the women's event was 172.5cm and of the medallists was 170cm. The height of the hurdle represents 44.17% of the height of the finalists and 44.82% of the height of the medallists in 1992.

In the men's 400 metres event, the height of the hurdle is 91.4cm. This represents 50.41% of the height of the 39 entered athletes, 49.87% of finalists and 48.61% of medallists in the 1988 Olympic Games.

In the 1992 Olympic Games, the average height of the finalists in the men's 400 metres hurdles was 184.8cm and of the medallists 185.3cm. The height of the hurdle represents 49.4% of the height of the finalists and 49.3% of the height of the medallists.

If the height of the hurdle in the women's race was raised from 76.2cm to 84.0cm, the new height would represent 49.2% of entered athletes, 48.6% of the

height of finalists and 48.6% of the height of medallists in the 1988 Olympic Games in Seoul. It would also represent 48.6% of the height of finalists and 49.4% of the height of medallists in the 1992 Olympic Games. As in the sprint hurdle events, this change would make the technical demands of the women's and men's races more similar.

### 3 Conclusion

I hope this article has provided food for thought regarding hurdle heights in the women's events. Many coaches have already experimented with new heights in the women's 400 metre Hurdles and been able to observe good technical adaptation to them. Although further experimentation will be necessary, I hope this article has shown how necessary these changes are.