

High Jump Fan Design and Rule 182.4

Introduction

The changes to Rules 182.4 and 182.5 proposed by New Zealand were referred at the Technical Meeting in February 2001 to the Stadia Working Group for further study.

The details of the New Zealand Proposal are at Attachment "A".

Study

The writer consulted a track manufacturer, a leading consultant and a testing laboratory for advice.

The consensus of opinion is that it is possible to design the takeoff area to be level even for two concurrent high jumps. The IAAF T & F Facilities Manual in Figures 2.5 provides some examples of how high jump fans might be designed. The lean-to-slope design would give a level take-off area for the high jump but with some level complications at the junction with the circular track. However, the problem is that any level areas of synthetic surface will pond water, as there will invariably be some slight depressions in the surface as allowed in the Track Performance Specifications.

The more usual method of constructing the high jump fan is to use a radial slope such as shown on Manual Figure 2.5.d. The actual crossfall in the line of the high jump uprights would be approximately 1 in 393 for a maximum radial crossfall of 1 in 250. Then the crossfall at the depicted high jump takeoff line for high jump uprights say 4.1 metres apart centre to centre would be 10.4mm approximately. Thus it is seen that with this type of construction technique it is not possible to have a level takeoff as envisaged in Rule 182.5.

The method Judges use to set up the high jump varies between federations. In most instances the Judges check that the height of the crossbar at both supports is the same whilst in other federations the Judges check that the crossbar is level by using a spirit level. In both instances the height of the crossbar to the lowest point is measured.

The Stadia Working Group considered whether the crossbar should be made level so as to standardise with the practice for the Pole Vault. However, New Zealand quite rightly pointed out that for the High Jump, where there is a crossfall between the uprights as mentioned above, the jumper approaching from the low side would be disadvantaged to greater degree than if the height of the crossbar above the running surface at both supports was equal.

Therefore, **it is recommended that:**

- Rule 182.5 be amended to read " The take-off area should be level or the inclination shall be according to the requirements of Rule 182.4 and as illustrated in the Manual, and
- A new paragraph to be added to the present Rule 182.8 to read:
"The height of the supports above the surface shall be equal."

The Technical Committee at it's meeting in March 2002 accepted the first proposal but did not accept the latter proposal as at meetings where EDM is used for the high jump the supports for the crossbar will be level.

Another anomaly caused by the slope of the high jump fan is that when, as is usual, the high jump is conducted so that the athletes in their approach run up the slope say taking off 1 metre before the take-off line then the point of take-off is up to 4mm below the level of the surface below the crossbar at which the height is measured. However, if the high jump is conducted toward the kerb, such that the athletes run down the slope, then a point 1 metre from the takeoff line could be up to 4mm above the level of the surface at which the height is measured. Thus these latter athletes could be receiving a height advantage of 8mm compared with the situation where the athletes run up the slope. This could be avoided if Rule 182.4 is amended so that high jump competitions can only be conducted so that the athletes run up the slope.

The Working Group also agreed with New Zealand that the wording of 182.4 needs clarifying as they suggested, as this will agree with the construction depicted in the Manual.

The wording would be:

"The maximum overall inclination of the runway shall not exceed 1:250 along any radius of the semicircular area centred midway between the uprights and having the minimum radius specified in 182.3. The landing area should be placed so that the athletes' approach can be up the inclination" This wording was accepted by the IAAF Technical Committee.

The wording for the indoor Rule 218 may also need to be amended.

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IAAF Technical Committee Stadia Working Group
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Document amended September 2003 to agree with the decisions of the Technical Committee and the 2003 Edition of the IAAF Track & Field Facilities Manual.