

## USE OF COMBINED EVENTS SCORING TABLES

The current Combined Events scoring tables which are referred to in Technical Rule 39.11 may be located via the World Athletics (WA) website at <https://www.worldathletics.org/about-iaaf/documents/technical-information/>. As is explained there, the points scores in those tables (essentially dating back to 1984: the preamble gives an interesting history of the evolution and theory behind the scoring systems) are calculated for each event by using common formulae published by WA / IAAF:

- Track Events: Points =  $a \times (b - T)^c$  where T is Time in seconds
- Field events: Points =  $a \times (M - b)^c$  where M is Measurement in centimetres (jumps) or metres (throws)

Note that the position of “b” in the formula is different between track and field, as in track events a lower time will give higher points while in field events a higher height / distance will give higher points.

As an alternative to looking up points scores from the tables (either manually or using a LOOKUP formula – *note that if using a VLOOKUP function in Excel, care needs to be taken as the published tables do not show all possible times / heights / distances, only those where the rounded down score changes*), results systems can be designed using the abovementioned polynomial equation, so there are effectively three ways determine the points.

- Manual look-up from tables;
- System based (e.g. Excel) look-up from tables;
- Calculation using formula.

The formula-based approach is proving to be increasingly popular for those designing results systems for Combined Events competitions.

The values for a, b and c in the formula are constants, published by WA as above, which are specific to each event and differ for Men’s and Women’s events (outdoors and indoors), representing:

- a = the event constant: for track events, the shorter the race / likely Time in seconds and for field the lower the likely height / distance Measurement (Jumps in centimetres, Throws in metres), the higher the value that “a” will need to be (with an underlying objective that performances of equivalent quality in different events will produce a broadly similar points score, e.g. an excellent performance at international level will produce a score of around 1,000 points);
- b = the maximum time / minimum height or distance at which a point will be scored (e.g. the time it is estimated to take to walk 100m);
- c = the exponent: this will be a value between 1 and 2. a deliberate attempt by WA to ensure that relationship between performance and Points scores in any one event is not a straight line but a curve, so that a specific improvement in time or distance at a high level should be more highly rewarded than the same improvement at a low level (referred to as a “progressive” system).

In the case of Combined Events competitions under UKA Rules for **Age Groups younger than World Athletics Age Groups** (i.e. U17, U15 and U13), dealt with in Rule T39 S1 UKA Supplement, the scores for the majority of events (those which are also included in the Men’s Decathlon or Indoor Heptathlon and the Women’s Heptathlon, Decathlon or Indoor Pentathlon) can simply be found from the WA tables, or by using the same WA polynomial formula and the same values for a, b and c.

However, the WA information does not for these younger age groups deal with either the hurdles events (both male and female) or the Boys' 800m. Scoring tables for those events at U17, U15 and U13 age groups can be found via the English Schools AA (ESAA) website at <http://www.esaa.net/>. Those were put together by a group of ESAA officials for the ESAA Championships held at Sheffield in 1992, and have since then been used as the standard at these age groups for both schools and non-schools competitions (their use for the latter has been formally confirmed by the Technical Advisory Group of UK Athletics).

If a competition provider wishes to design their results system using a formula that can be achieved for these *men's / boys'* events using the WA formula but with the following parameters:

	Parameters		
	a	b	c
U17 Men's 100m Hurdles	7.237	27	1.835
U15 Boys' 80m Hurdles	7.399	24	1.835
U13 Boys' 75m Hurdles	7.399	23	1.835
U15 / U13 Boys' 800m	0.232	200	1.85

This will give the same results as looking up the scores in the tables on the ESAA website. Note that, as with the WA parameters the result must be rounded down to the nearest whole number.

For *U17 Women's 80m Hurdles, U15 Girls' 75m Hurdles and U13 Girls' 70m Hurdles*, the WA formula cannot be used, as a different curve has been adopted for both schools and non-schools competition (based on the 1971 IAAF Scoring Tables for Women). The following formulae will give the same result as the ESAA tables:

U17 Women's 80m Hurdles	Points = $19367.3 / (\text{Time in seconds} - 0.005) - 815.117$
U15 Girls' 75m Hurdles	Points = $19367.3 / (\text{Time in seconds} + 0.995) - 815.117$
U13 Girls' 70m Hurdles	Points = $19367.3 / (\text{Time in seconds} + 1.995) - 815.117$

Thus, for example, a time of 13.72 sec for U15 Girls' 75m Hurdles will give a (rounded down) score of 501 points ( $19367.3 / (13.72 + 0.995) - 815.117$ ).

For **Masters' Combined Events** please refer to the British Masters Athletic Federation website at <http://bmaf.org.uk/laws-and-rules/> where there are links provided to the WMA Scoring Tables for each age group and to Appendix B of WMA Rules at <https://world-masters-athletics.com/documents/competition-rules/> which deals with the Scoring of WMA Combined Events Competitions and explains the use of Age Factors.

UK Athletics Rules Advisory Group  
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