

## Appendix K : The Ranking Scheme

### 1. Introduction

#### 1.1 Aim of Ranking List

1.1.1 The aim of the computerised British Orienteering ranking scheme is to rank all regular and competent orienteers in senior age classes and M/W18/20 classes in order of orienteering ability. The hope is that this will spur the spirit of competition, thereby helping to raise both navigational and fitness standards. Ranking lists may also be used for International selection purposes as well as for seeding competitors at major events.

#### 1.2 Inclusion of Events

1.2.1 Organisers of Badge Events and certain other events, such as UK Cup races, can choose whether the event is to be a ranking event or not. This information is required on the ER1 event registration form.

1.2.2 All British Championship, JK and National Events are required to contribute.

1.2.3 IOF World Ranking points scored by British runners in World Cup finals, World Games and World Championship qualification and final races are converted to British Orienteering ranking points for inclusion in the British Orienteering rankings. The conversion is achieved by comparing the points scored under the IOF and British Orienteering ranking schemes at a selected British World Ranking Event.

#### 1.3 General Description

1.3.1 The key to the system is the British Orienteering membership number. Membership numbers are used to link results from different events for a given runner.

1.3.2 The total of a runner's best six scores over the past 12 months gives a runner's current ranking. Short classes (and M/W18B) are ranked, although their ranking lists are separate from those for the Long courses. Points are not transferable between classes.

1.3.3 When a competitor wishes to be ranked as a member of a new club or under a change of name, the British Orienteering National Office should be informed so that the membership records can be updated. This will then update the information in the ranking lists.

1.3.4 The national rankings lists are available via the British Orienteering web site at all times. Printed copies may also be made available from time to time. The web site also contains a complete record of the Mean Times and points calculation for each course at each ranking event included in the rankings database.

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### 2. Production of the Ranking List

#### 2.1 Submission of Results

- 2.1.1 Provisional results should be submitted to the ranking page on the British Orienteering web site as soon as possible, and preferably on the evening of the event.
- 2.1.2 Final results must be submitted electronically to the ranking page on the British Orienteering web site within 14 days of the event. If a ranking event fails to meet this condition then the organising club will not be permitted to hold another ranking event until it can guarantee to meet the condition.
- 2.1.3 Results must be submitted in the British Orienteering file format, as defined on the ranking page on the British Orienteering web site. There is a compliance testing utility on the web site that will check the format of a results file before it is submitted.
- 2.1.4 The validity of the rankings lists relies heavily on the accuracy of the event data supplied to the compilers of the list. Thus, event Organisers are asked to include competitor British Orienteering numbers with their results and to submit them as soon as possible after the event.

#### 2.2 Calculation of Ranking Points

- 2.2.1 The ranking scheme was started by using results from the JK and British Championships in 1999. In each class, 1000 points were awarded to a runner matching the mean (average) time, and 200 points were added or subtracted from this for each standard deviation time (a measure of spread) faster or slower than the mean time (pro-rata).
- 2.2.2 Runners who have previously gained points in a class are called 'ranked runners' and their 'current score' is the mean of all their previous scores in the last year (not just the best six). This current score is used as the best predictor of their performance at an event (though it is their best six results that make their published ranking). The ranking scheme operates by using the performance of ranked runners in each class at an event to standardise the scores. This process ensures that points awarded to a runner are (as far as possible) dependent only upon the quality of the run and not who else turns up at the event.
- 2.2.3 At ranking events, the mean of the current scores of the ranked runners in a class is awarded to a runner matching the mean time of those ranked runners. The standard deviation of the current scores of those ranked runners is also calculated along with the standard deviation of their times.
- 2.2.4 The standard deviation score is added or subtracted from the mean score for each standard deviation time faster or slower than the mean time (pro-rata). The current scores of all ranked runners are rebased after each event to ensure that in each class, the mean current score of all ranked runners is 1000 and the standard deviation of their current scores is 200. This prevents the scores drifting over time.

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- 2.2.5 A special calculation is used for classes that are too small for a standard deviation to be measured reliably. The standard deviation is estimated at 16% of the average time for the class.

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2.2.6 Points for the rankings lists are calculated as follows:

Runner's points = Mean score for ranked runners + standard deviation of mean scores of ranked runners x (mean time of ranked runners - runner's time) / standard deviation time of ranked runners  
*(for classes with 20 or more ranked runners within the winner's time plus 75%)*

Runner's points = Mean score for ranked runners + [200 - 0.16(mean score for ranked runners - 1000)] x (mean time of ranked runners - runner's time) / (0.16 x mean time of ranked runners)  
*(for classes with 10 or fewer ranked runners within the winner's time plus 75%)*

The second formula simplifies to:

Runner's points = 2250 - runner's time x (2250 - mean score for ranked runners) / mean time of ranked runners

2.2.7 If there are no ranked runners within the winner's time plus 100% then the average time is awarded 1000 points and 200 points are added or subtracted from this for each standard deviation time faster or slower than the mean time (pro-rata).

2.2.8 For classes with between 10 and 20 ranked runners within the winner's time plus 75% then a weighted average of the scores given by the two formulae above is used.

2.2.9 A weighted calculation is used for times between 50% and 100% greater than the winner's time when calculating the mean and standard deviation, the weighting going from 1 to 0 over that range.

2.2.10 The conversion between IOF and British Orienteering Ranking points is calculated as follows. At a British world ranking event, if runner X scores  $X_b$  points in the British Orienteering scheme and  $X_i$  points in the IOF scheme and runner Y scores  $Y_b$  points in the British Orienteering scheme and  $Y_i$  points in the IOF scheme then:

British Orienteering points = IOF Points x  $(X_b - Y_b)/(X_i - Y_i) + (X_i Y_b - X_b Y_i)/(X_i - Y_i)$