

British Orienteering Rankings Workgroup (RWG)

Interim Report for Consultation

Explanatory Foreword

In November 2008, the Board of British Orienteering formed a working group to review the purpose and principles that should underpin a national ranking scheme for the sport. The terms of reference for the RWG are reproduced in Appendix 1. An interim report was presented to the Board in February 2009, the recommendations of which were accepted, which in summary were:

- to progress the development of the website programming which will underpin the new ranking scheme
- to consult widely with other committees, working groups and the membership at large within British Orienteering concerning various operation aspects of the new ranking scheme

Several people have sent in their thoughts and ideas to the group, and these have been considered as part of our deliberations. We thank these contributors for their input.

This paper presents the interim findings of the RWG, and in publishing it we are inviting comment and constructive criticism on the direction of travel which we are proposing. The proposals and discussion points are clearly identified throughout this paper, and are listed in Appendix 1. It would be most helpful if respondents could identify specifically to which issue(s) they are referring in their comments. The RWG will take into account the feedback we receive as a result of this consultation paper, in finalising our proposals for consideration by the Board.

We invite contributions, preferably by e-mail to rankings@britishorienteering.org.uk or by post to the British Orienteering National Office. Please send your contributions before 10th July 2009.

We look forward to hearing from you.

The Ranking Working Group comprises:

Martyn Broadest, Chair
Scott Collier, representative of Development Committee
Barry Elkington
Jon Hollingdale
David May
Steve McLean, representative of Coaching Committee
David Rosen

Introduction

Broadly speaking, the shortcomings of the existing Ranking scheme can be summarised as follows:

- it is incompatible with new event structure
- there is little competition in certain age classes, and this devalues the rankings
- a relatively small proportion of orienteers compete in sufficient ranking events
- there is generally limited interest amongst orienteers, possibly arising from poor promotion and recognition

The Event Structure Review Group made recommendations as to how they saw a new Rankings Scheme operating in future. The RWG considered these recommendations in the context of the wider scope of the group's Terms of Reference.

The RWG believe there is considerable merit in providing a credible and authoritative national ranking scheme for orienteering, and British Orienteering should invest appropriately to achieve this.

The RWG identified the following factors as being important benchmarks against which the new ranking system should be judged.

PRINCIPLES The ranking system should be...

- Inclusive
- An overall measure of ability
- An incentive scheme that encourages participation and links with existing or future other incentive schemes
- Fair, credible, authoritative and widely accepted as representing an accurate assessment of comparative performance
- A single ranking scale (see below)
- As simple and understandable as possible, given the above criteria
- Up to date and responsive to recent performances

OPERATION The Ranking system should be...

- Used for publicity and public relations
- Filterable, including the capability to use data for other purposes
- Have content that is downloadable which can be used flexibly
- Easily accessible
- Of use in seeding for major events
- Able to provide data on a subscriber basis, with user defined reporting / filters
- Able to produce aggregate data such as a club league
- Able to produce individual / group progression data over a given period of time, based on snapshot data recorded at pre-determined intervals
- Fully automated and easy for event organisers to upload information
- Able to accept updates to previously uploaded results
- Integrated with events and results systems
- Updated after each event uploaded, but snapshot taken once a week at a pre-determined time

Core of the Proposed Ranking Scheme

The RWG has examined ranking schemes used by other orienteering nations and by other sports in the UK, and has identified a significant range. The particular nature of cross-country orienteering competition makes the relatively straightforward approaches employed by other sports problematic for orienteering. The range of terrain, course length and variability of competition create difficulties in using simple points based systems.

There is unanimous agreement amongst the RWG that the core of the new Ranking Scheme should be a web-based single scale of rankings across all age classes, with ranking points calculated according to relative performance at an event, normalised according to the strength of the field at that event and the spread of times. This would be a development of the maths behind the existing ranking scheme and indeed the IOF World Rankings.

A detailed description of how ranking points would be calculated under this system is shown in Appendix 2.

This approach is compatible with the new event structure, addresses many of the shortcomings of the existing ranking system, and is flexible to accommodate those areas yet to be finalised which are described below. Development and testing of the algorithm and software programming is likely to be a time consuming process, and given that the operational aspects of the system (discussed below) can be finalised independently, there is no reason why the development and testing work cannot proceed straight away.

The Board has accepted both that it is right to invest in a new ranking system, and that it should be based on the approach outlined above. Work has begun to develop and test the algorithm that will underpin the system, and the computer programming that will be required to make it work.

These aspects of the RWG's proposals are not being consulted upon. The remainder of this paper presents those issues on which we are inviting comment.

Presentation of the Ranking Scheme

The ranking scheme as proposed above would result in all orienteers who complete the requisite number of ranking events, being entered into a single ranking scale.

The RWG envisages that the ranking scheme will be presented on the British Orienteering website in an interactive fashion such that users can filter the rankings database by a range of different criteria. Such criteria might include age class, club, association, event type, event level, and so on. The RWG also envisages that there will be the facility to set up and store user-defined reports, even down to selecting individual competitors to create mini-leagues.

As well as this interactivity, the RWG envisages that a number of default views or lists will be available at the "click of a button".

The interactivity described above will also provide the facility for individuals, clubs, associations and others to download ranking data which they can use for their own purposes, eg. Galoppen leagues, offering significant volunteer time savings compared to how such leagues are calculated currently.

Question 1:

What criteria would you like to use to filter the rankings scale to produce lists which are relevant to you?

What default ranking "lists" should be available on the website?

Would you value a facility to create your own bespoke report that could be saved, re-opened and refreshed at a later date?

What do you think of the idea that the rankings scale could be used as the basis for leagues and competitions, such as Galoppens?

Designating Ranking Events

The RWG has considered the new event structure as implemented in the context of its objective to increase participation in the ranking system and by association, the number of ranking events available. It has concluded that it cannot widen the range of events available and keep within the simple confines of the three level event structure as it stands.

Therefore, the RWG proposes that Ranking Events be designated according to whether the event meets certain key criteria, and not according to event Level. The RWG has given consideration to what these criteria might be and has concluded that they should include the following:

- Accurate timing and punch checking by officials (normally through an electronic punching system)
- Cross-country format (excluding mass- and chasing-start events, score events and relays)
- Competitive (eg. Maps with courses not available before the start)
- Results to be provided in electronic format and uploaded within target timescale
- Maps to be pre-printed
- Event to be run in accordance with relevant British Orienteering Rules and Guidelines.

These criteria have been identified as those which specifically impact on the nature of the race and the factors included in the ranking points calculation.

All level 1 and 2 cross-country events will automatically meet these criteria. A proportion of level 3 events could also meet these criteria, and clubs would be asked to self select events as Ranking Events, on the understanding that results will be uploaded in the required format and timescales. The RWG estimate that between 300 and 400 events per year could meet these criteria.

Cross-country night events are capable of meeting the above criteria. The RWG recognises that there are arguments both for and against the inclusion of night events in the ranking scheme, and would be keen to hear wider views on this issue.

Question 2:

Do you agree with the criteria outlined above as a means to define whether an event can be a Ranking event?

What other criteria, if any, would you suggest should be used to distinguish ranking and non-ranking events?

Do you think that night events should be included in the rankings?

The RWG does not propose, at this stage, that any events should receive a greater weighting for ranking points purposes. To do so effectively marginalises points scored at the lower weighted events to a very significant extent, and therefore acts against the principles of inclusivity and wider participation to which the RWG is committed. The RWG considers that there are other more effective ways of encouraging participation at premier level events. These might include having a National League specific to points scored at Level 1 events, or indeed differentiating between ranking points scored at Level 1 (National) events and other events. However, we recognise that weightings may be required in future, and therefore the software should be developed so as to allow this flexibility in future.

Question 3:

Do you agree that all ranking events should receive the same points weighting?

Question 4:

Do you agree that the “National Rankings” should be based on scores at all ranking events? Alternatively, do you think that the “National Rankings” should be based exclusively on Level 1 events (National events, the JK, and all the British Championships), with separate “Regional Rankings” produced from scores at all Level 2 and 3 events? Or would some other model be your preference?

The RWG proposes that results on all TD4/5 courses at eligible events be included in the rankings (to include all adult courses at Sprint/Urban races which will usually be of a lower technical difficulty). Courses of a lower technical difficulty will be excluded from the ranking scheme as we consider them to be aimed at beginners and/or are likely to produce results which would disproportionately affect ranking point scores. The RWG also consider that other incentive schemes (such as the colour standard badge system) provide a more appropriate recognition of competitor achievement and progression at this level.

Question 5:

Do you agree that ranking points should be awarded on all courses of Technical Difficulty 4 or above (or all adult courses at Sprint/Urban races)?

If not, on which courses would you like to see points awarded, and why?

Do you see the colour standard badge system as a useful incentive for newcomers to orienteering to develop their skills and measure their progress? If not, what alternatives would you suggest?

Eligibility for Rankings

The RWG envisage that only members of British Orienteering (National or Local) will be eligible to be ranked. This is essential as the British Orienteering membership number is required to act as a unique key to identify individuals within the ranking system. Taking part in the ranking scheme would therefore be a benefit of membership.

The RWG considers that the current mechanism of "best 6 events to count" (over the last 12 months) will continue to serve the new Ranking scheme well.

The RWG consider that Juniors should not automatically be excluded from the Ranking Scheme. Under existing age class guidelines M/W14A and above compete on courses which would contribute to the rankings at designated events. The RWG believes that if junior orienteers are good enough to run a ranking-eligible course (i.e. TD4 level and above), then they are good enough to be ranked.

However, the RWG recognises that in the past there have been legitimate concerns about juniors "running up" (and thus competing on courses beyond their competence) in order to score ranking points, and we are particularly keen to get wider views on this issue.

Question 6:

Given the proposed increase in number of ranking events, how many events do you think the ranking scale should be based on? Is six still the right number?

Do you believe that juniors running ranking eligible courses should be excluded from the ranking scale?

International Events

The RWG believes that for the Ranking Scheme to be credible in needs to reflect the performances of all British orienteers. To exclude some of our top athletes because they choose to live and/or compete largely abroad, would result in obvious gaps at the top of the rankings.

The proposed ranking scheme is compatible with the IOF World Ranking system, and it is proposed that British athletes can gain ranking points where they have been selected to compete for GBR in a representative World Ranking Event (i.e. WOC, EOC, the World Cup and the World Games).

Question 7:

Should selected international performances be incorporated into the UK ranking scale?

Integrating the Rankings with Incentive Schemes

The RWG recognises that Development Committee have been charged with looking at incentive schemes across the sport. However, as the ranking system itself is an incentive scheme, the RWG has considered where it could sit within an overall approach.

The RWG considers the colour standard system to provide the most appropriate approach to recognition of achievement at TD3 level and below, with some overlap with rankings at shorter courses as TD4/5.

The proposed Ranking scheme could become the primary measure of progression above this level, and the RWG considers that the existing Badge scheme (gold, silver and bronze) could be revised to link with the system. Championship badges would continue to be exclusive to Level 1 events and awarded based on % time as at present.

The ranking scheme could be used in other ways to create calendar-defined leagues or trophy competitions, either at a national or more local level. Such an approach, if sufficiently promoted and resourced, could provide additional competition incentives within the sport.

Question 8:

How do you think the new ranking system as proposed (or indeed modified in line with your earlier comments) could link with other incentive systems, either current or newly introduced?

Final question:

Having read these proposals, assuming they are implemented, do you think you are more or less likely to take notice of the rankings in future, compared to that which you have in the past?

Rankings Working Group
May 2009

British Orienteering Rankings Workgroup

Terms of Reference

Authority

The Workgroup is authorised by the Board of British Orienteering to work in accordance with these Terms of Reference. The Workgroup has the right of access to the Board and all Committees and working groups and may seek external input for support or advice or to seek examples of good practice.

Composition and Membership

The Workgroup will consist of a Chair and members with experience of the relevant sectors of British Orienteering. Advertisements for representative members of the Workgroup will be placed on the British Orienteering web site; after consideration appointments will be made by the Board. In the absence of the Chair at meetings, he/she will appoint a deputy. The Chair of the Workgroup has the right to co-opt further members and the authority to call on expert advice either to join the group or for ad-hoc input.

Key representative will be identified from:

- Members of British Orienteering that are frequent users of the current ranking list
- Members or staff working in the development programme
- Coaching
- World Class Programme athletes
- Member of the Development Committee
- Member of Events Committee
- A non-member or new member

Chief Executive and Chairman of British Orienteering have the right to attend or be corresponding members.

Responsibilities

The Board believes incentive schemes, such as the rankings system, can play a significant part in supporting the recruitment and retention of participants in orienteering.

The Workgroup is responsible for:

- a. Reviewing the purpose of the Ranking System and how the System integrates with other incentive schemes that are, or may become, available
- b. Recommending to the Board the principles and priorities that will underpin the Ranking System as it is re-developed for full integration into the British Orienteering web site
- c. Recommending to the Board other changes that may be necessary to provide a more integrated and fuller approach to incentive schemes in orienteering

The Workgroup is not responsible for:

- a. Establishing the details of an operational ranking algorithm
- b. The operational procedures that will support the use of the Ranking System

The following tasks should be performed and output delivered:

- Evidenced based review of the current Ranking System, its use and member satisfaction with the System
- Review of the use of ranking systems in other orienteering nations and by other sports in the UK
- Review of the purpose of the Ranking System and a clear recommendation as to the future purpose of, and objectives for, the System
- Establish the principles that should underpin the Ranking System and prioritise them
- Establish methods by which the effectiveness of the Ranking System in meeting its purpose can be evaluated
- Advise the Board of any implications that may result from this review on other areas of work or policy

On completion of, and reporting on, these tasks the Workgroup will have completed its work and will be dissolved.

Reporting Structure

The Workgroup shall report through its Chair to the Board of British Orienteering. All minutes of meetings, statements and recommendations of the Workgroup will be made public through the British Orienteering web site. The Workgroup has the right to maintain the confidentiality of any materials or information that might be of a sensitive nature.

Meetings

The Workgroup shall meet as needs require, although it is expected that most of its work will be done by electronic means.

Calculation of Ranking Points

1. The new ranking scheme will be started by using results from selected events in 2008 and 2009 to generate a large pool of runners each of whom will have a number of startup points. The whole pool will be normalised so that the mean points per competitor will be 1000 and the standard deviation of competitor points will be 200. This will be done separately (probably via Excel) using data from the existing BO results database
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). The last year is the 12 month period up to the date of the event being computed; any subsequent scores are ignored. 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 on each course 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.
3. At ranking events, the mean of the current scores of the ranked runners on a course 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. For these four calculations, the final 10% (rounded up) are ignored e.g. if there are 38 ranked runners on a course, only the first 34 are used for the calculation. Further, any runners taking more than the winner's time plus 100%, who have not been eliminated by ignoring the final 10%, are also ignored. That helps to exclude outliers.
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 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.
5. A special calculation is used for courses that are too small for a standard deviation to be measured reliably. For courses with between 1 and 10 ranked runners, the standard deviation time is taken to be 20% of the mean time.
6. Points for the rankings lists are calculated as follows:

$$\text{Runner's points, } RP = MP + \frac{SP \times (MT - RT)}{ST}$$

- $(MT - RT)/ST$ gives number of standard deviations of runner's time RT above or below race mean time MT (ST is the standard deviation of the ranked runners' times)
- Multiplying by SP , the standard deviation of the ranked runners' points, converts this to points
- This difference is added to MP , the average points for the runners in the race and this gives the runner's points RP
- a modified formula is used for small courses (see 1.5)
 $RP = 2000 - RT(2000 - MP)/MT$
- If there are between 11 and 19 ranked runners, a weighted mean of the scores given by the above two formulae is used, e.g. with 17 runners, the points are
 $0.7 \times \text{Main formula} + 0.3 \times \text{Small course formula}$

Example

- Suppose X comes 4th on a course in a time of 88 minutes (RT); the average time for the ranked runners in the race is 100 minutes (MT) and the standard deviation of their times is 10 minutes (ST)
 - Thus $(MT - RT)/ST = 12/10$, or 1.2 standard deviations above the average time for the ranked runners in the race
 - Suppose the quality of the runners is high (mean points (MP) = 1100 and standard deviation (SP) = 100)
 - So X gets more points than the average runner, this given by $1.2 \times 100 = 120$
 - Thus final points = $1100 + 120 = 1220$
7. If there are no ranked runners within the winner's time plus 100% then nobody on the course scores ranking points.
 8. The conversion between IOF and BOF Ranking points is calculated as follows. At a British world ranking event, if runner X scores X_b points in the BOF scheme and X_i points in the IOF scheme and runner Y scores Y_b points in the BOF scheme and Y_i points in the IOF scheme then:

$$\text{BOF points} = \text{IOF Points} \times (X_b - Y_b)/(X_i - Y_i) + (X_i Y_b - X_b Y_i)/(X_i - Y_i).$$
 9. This is unlikely to be capable of being automated. However, the new rankings system must be capable of accepting points directly as well as calculating them from results data