Appendix D: Mapping

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This Appendix is to be read in conjunction with the British Orienteering Rules of Orienteering and has the same authority.

Introduction

Any issues associated with mapping or with any of the details in this Appendix should first be referred to Map Advisory Group.

1. Mapping

1.1 Application of Rules

1.1.1 See the British Orienteering Rules of Orienteering sections 18 & 19 for mandatory requirements.

1.1.2 Approval to vary any of the British Orienteering or IOF specifications or details in this Appendix must be obtained in good time from Event & Competitions Committee.

1.1.3 See Rules 18.8 and 18.13 for essential information to be shown on the map. In addition the following variations should be noted:

(a) It is not essential to show the full legend on Level A event maps apart from special symbols.
(b) Colour check and register crosses are required on off-set litho printed maps.
(c) For professionally printed maps, the name and contact details of the printer should be shown or a suitable space should be left (Printer’s Imprint Act 1961). For club printers add “Printed by [Name of Club]” or similar.
(d) Maps for Level A events must use the British Orienteering layout design, which can be obtained from the British Orienteering office.

1.1.4 The map should carry the appropriate access and permission statement, for example “Possession of this map does not imply right of access to the area for orienteering or any other purpose. Permission must be obtained from the landowner. The representation of a path or track does not indicate a right of way.”

1.2 Specifications

1.2.1 Maps for Trail Orienteering (ISOM), Mountain Bike Orienteering (ISOM) and schools should be produced using the appropriate specification.

1.2.2 Maps for schools should be produced using the British Orienteering Specification for School Orienteering Maps.

1.2.3 Symbols specific to one discipline should not be used for other disciplines.

1.2.4 Some Level D events such as street events and training events fall outside these specifications and this appendix does not apply to maps produced for those events.

1.3 National variations: additional symbols and colours

1.3.1 The approved British Orienteering variations to the IOF ISOM Specifications are listed below. Dimensions are specified as for 1:15,000 scale.
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Map symbols
(a) Symbol 119: Platform - a flat area originally used for charcoal burning is represented by a brown triangle pointing down the slope, 0.8mm each side (the same size as the boulder cluster 209)

(b) Symbol 525.1: Stile - a crossing point over a wall or fence suitable only for foot passage is represented by a black line 0.18mm wide and 1.0mm long

(c) To improve the visibility of contours and other brown features on maps comprising only open and rough open land: Symbol 401, open land (normally Yellow 100%) and symbol 403, rough open land (normally Yellow 50%) may both be reduced in intensity

1.3.2 See the British Orienteering Rules of Orienteering Sections 20 & 21 Course Planning for mandatory requirements with regard to Course Drawing. The approved British Orienteering variations to the IOF ISOM Specifications are listed below.

Course setting symbols
(a) Symbol 703: Control number dimensions are recommended to be between 4mm (16pt) and 5mm (20pt) in Arial Bold colour purple

(b) For multi-age competitions in which both scales are used, the size of the symbols on the 1:10000 maps may be 150% greater than on the 1:15000 maps – this makes for consistent control descriptions across both map scales.

(c) For maps produced only at the 1:10,000 all the overprint symbols may be enlarged to 150%. For 1:10000 maps, where the overprints are not enlarged to 150% the line thickness should still be increased to between 0.40mm and 0.50mm. The thicker line should be used where the map has a lot of content such as vegetation, buildings or contours.

1.3.3 Map Advisory Group recommends that to improve legibility for runners with colour vision defects, the colour used for course overprints on a laser printed map is changed in the OCAD colour table from the default value (100% magenta) to at least CMYK 20,100,0,0 and ideally between 30,100,0,0 and 40,100,0,0.

1.3.4 Map Advisory Group has issued a set of symbols for use with OCAD in accordance with the latest ISOM 2000, ISSOM 2007 and British Orienteering Specifications for School Orienteering Maps. Copies may be obtained from British Orienteering web site.

1.3.5 Features that are smaller than defined by the IOF Specifications, that is less than 1m, (pit, dot knoll, boulder, small depression) in less well-featured, smoother terrain may be mapped if they are prominent. The lower value may increase in rougher terrain with more or larger features.

2. Map scales

2.1.1 The scales, symbol sizes and contour intervals for maps for each type of event at levels A, B, C and D are set out in tables 1 to 4 below. Subject to the provisions in Schedule 1 to this Appendix.
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2.1.2 For Level A long distance events enlargements must be provided for classes M/W16 and below and M/W45 and above in accordance with the Level A Competition Rules.

2.1.3 For Level B Events, other than Sprint or Urban, the map must be printed at a scale of 1:15,000 or 1:10,000 with 5m or 2.5m contours. When a map scale of 1:15,000 is used, enlargements must be provided for classes M/W16 and below and M/W45 and above at 1:10,000.

2.1.4 For Level C Events it is preferred that these scales are used, however other scales and contour intervals may be used but care should be taken that this does not result in the inclusion of an excess of small details and features affecting clarity. Where ISOM maps use other scales, for scales between 1:10,000 and 1:5,000 the symbols size should be 150% and for larger scales should be 200% of the 1:15,000 scale symbol.

2.1.5 In order to ensure that a map is legible, terrain should be surveyed and drawn to ensure that it is legible when printed at a scale of 1:15,000 (ISOM) and 1:5,000 for Sprint and Urban maps (ISSOM). The surveyor must select which features to include on the map to ensure the clarity of the end product. The ISOM and ISSOM map specifications define the minimum distances between lines and symbols.

3. Map printing

3.1.1 The map printing method required for each level and type of event map is set out in tables 1 - 4 below.

3.1.2 Maps for Level A events must be printed by off-set litho, or by other method as shown in Table 1 provided that:-

(a) The professional printing firm is approved by Map Advisory Group. To gain approval the printer must submit samples of their work including a test file (available in OCAD and PDF format from http://lazarus.elte.hu/mc/print-tech/index.html).

(b) Following confirmation from the Controller and Map Adviser that they agree the quality of the map will be adequate for the event, Map Advisory Group agree approval based on submission of a print of the whole area at the smallest scale on the paper that is to be used.

3.1.3 Level B maps should be printed by an approved professional printing firm or approved club printer provided that the printer is approved by Map Advisory Group. To gain approval the printer must submit samples of their work including a test file (available in OCAD and PDF format from http://lazarus.elte.hu/mc/print-tech/index.html).

3.1.4 Maps for all events should ensure that all detail is legible and colours are distinguishable.

3.1.5 The Map Advisory Group will provide advice on map production for mappers.

4. Mappers and Map Advisers

See the British Orienteering Rules of Orienteering section 19 for Mappers and
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Advisers mandatory requirements.

4.1.1 Event and Competitions Committee are responsible for ensuring that a Map Adviser is appointed for each Level A event. The Map Adviser's role is to give advice and support on all aspects of the mapping process.

4.1.2 It is expected that Map Advisers will keep up to date with current mapping trends through their own mapping and by attendance at the National Mapping Conference from time to time.

4.1.3 For all other events where a new map is being produced, a Map Adviser is desirable and Event and Competitions Committee will appoint an adviser if one is requested.

4.2 Map Advisers' responsibilities

4.2.1 The Map Adviser should give advice to the mapper(s) and the Organiser to ensure that the map is of a proper standard for the event.

4.2.2 This advice should aim to ensure that:

(a) adequate manpower and time are available for the task.
(b) appropriate methods and materials are used.
(c) the appropriate Rules, specifications, symbol sets etc are applied, in both survey and cartography and approval from Map Advisory Group is sought for any proposed deviations from them.
(d) reasonable and realistic time scales are adhered to.
(e) the interpretation of the terrain and the generalisation of the contents are suitable for a map for the event at the appropriate scale and level.
(f) the cartography is completed to specification within a suitable layout.
(g) Arrangements for printing are appropriate.

4.2.3 The Map Adviser should keep close liaison with the event officials and advise what steps need to be taken if serious inadequacies are discovered.

4.2.4 Unresolved problems must be referred to the Map Advisory Group Chairman.

4.2.5 Brief reports should be provided periodically for the Map Advisory Group and the Chairman, Events & Competitions Committee. An advising procedure for level A events is available on the British Orienteering web site.

5. Schedule 1

5.1.1 Passed at British Orienteering AGM 2014 Effective January 2015

5.1.2 Applies to all Level A & B competitions, where the format is either Long distance, Middle distance, Night or Relay.
### 5.2 Permitted map scales

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Age Classes</th>
<th>Map scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long (Level A)</td>
<td>18E, 20E &amp; 21E</td>
<td>1:15,000</td>
</tr>
<tr>
<td></td>
<td>18 to 40 excluding Elite Classes</td>
<td>1:15,000 or 1:10,000</td>
</tr>
<tr>
<td></td>
<td>10 – 16 45 and above</td>
<td>1:10,000 or 1:7,500</td>
</tr>
<tr>
<td>Long (Level B)</td>
<td>18 to 40</td>
<td>1:15,000 or 1:10,000</td>
</tr>
<tr>
<td></td>
<td>10 – 16 45 and above</td>
<td>1:10,000 or 1:7,500</td>
</tr>
<tr>
<td>Middle and Night (Levels A and B)</td>
<td>18 to 40</td>
<td>1:10,000</td>
</tr>
<tr>
<td></td>
<td>10 – 16 45 and above</td>
<td>1:10,000 or 1:7,500</td>
</tr>
<tr>
<td>Relay (Levels A and B)</td>
<td>Premier Trophy, 40, 120+</td>
<td>1:10,000</td>
</tr>
<tr>
<td></td>
<td>Other classes</td>
<td>1:10,000 or 1:7,500</td>
</tr>
</tbody>
</table>

### 5.3 When the permitted map scales should operate

5.3.1 Where a decision is required about which map scale to use for certain classes at a Level A or B event, the presumption must be in favour of the smaller of the permitted scales.

5.3.2 The larger of the permitted scales may be used if the Planner and Controller of the event agree that the map at the smaller scale is too difficult for competitors in the relevant class to read while running.

### 5.4 Resolution in the event of a dispute

5.4.1 At Level A events where the Planner and Controller are unable to agree which map scale to use for certain classes, the issue must be referred to Events & Competitions Committee, whose decision will be final.

5.4.2 At Level B events where the Planner and Controller are unable to agree which map scale to use for certain classes, the issue must be referred to the Constituent Association in which the event is registered, whose decision will be final.
6. **Table 1 - Level A event maps**

Competition maps must include the information set out in the British Orienteering Rules of Orienteering, Section 18 - Mapping. The map must be current and reflect the state of the terrain at the time of the event. Subject to Schedule 1 above.

WRE events require approval at IOF level for Laser/digital printing.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Scale</th>
<th>Symbol Size</th>
<th>Enlarged Map Scale</th>
<th>Enlarged Symbol Size</th>
<th>Contour interval</th>
<th>Print Method</th>
<th>Approved Printer</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long Distance</strong></td>
<td>ISOM 2000</td>
<td>1:15,000</td>
<td>100%</td>
<td>1:10,000</td>
<td>150%</td>
<td>5m or 2.5m</td>
<td>Offset litho</td>
<td>Approved Professional</td>
</tr>
<tr>
<td><strong>Middle Distance</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td>None</td>
<td>None</td>
<td>5m or 2.5m</td>
<td>Offset litho</td>
<td>Approved Professional</td>
</tr>
<tr>
<td><strong>Sprint</strong></td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td>1:4,000</td>
<td>100%</td>
<td>2.5m or 2m</td>
<td>Offset litho or Laser/digital</td>
<td>Approved Professional</td>
</tr>
<tr>
<td><strong>Relay</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td>None</td>
<td>None</td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Approved Professional</td>
</tr>
<tr>
<td><strong>Night</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td>None</td>
<td>None</td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Approved Professional</td>
</tr>
</tbody>
</table>
### 7. Table 2 - Level B event maps

Competition maps must include the information set out in the British Orienteering Rules of Orienteering, Section 18 - Mapping. Maps should be up to date and reflect the current state of the terrain. Subject to Schedule 1 above.

WRE events require approval at IOF level for Laser/digital printing.

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Specification</th>
<th>Scale</th>
<th>Symbol Size</th>
<th>Enlarged Map Scale</th>
<th>Enlarged Symbol Size</th>
<th>Contour interval</th>
<th>Print Method</th>
<th>Approved Printer</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Distance</td>
<td>ISOM 2000</td>
<td>1:15,000 or 1:10,000</td>
<td>100%</td>
<td></td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td></td>
</tr>
<tr>
<td>Middle Distance</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td></td>
</tr>
<tr>
<td>Sprint</td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td></td>
<td></td>
<td>2.5m or 2m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td>Paper size should not exceed A4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:4,000</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td></td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td></td>
</tr>
<tr>
<td>Relay</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td></td>
</tr>
<tr>
<td>Night</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Professional or Club</td>
<td></td>
</tr>
</tbody>
</table>

Score and Ultra Long Distance events: maps should use the appropriate specification.
## 8. Table 3 - Level C Event maps

These are recommendations and not mandatory. However competition maps should include the information set out in the British Orienteering Rules of Orienteering, Section 18 - Mapping.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Scale</th>
<th>Symbol Size</th>
<th>Enlarged Map Scale</th>
<th>Contour interval</th>
<th>Print Method</th>
<th>Approved Printer</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Distance</td>
<td>ISOM 2000</td>
<td>1:15,000 or 1:10,000</td>
<td>100%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td>Middle Distance</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td>Sprint</td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td>2.5m or 2m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:4,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
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<tr>
<td>Relay</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
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<td></td>
</tr>
<tr>
<td>Night</td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
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Score and Ultra Long Distance events: maps should use the appropriate specification.
### Appendix D: Mapping

#### 9. Table 4 - Level D event maps

<table>
<thead>
<tr>
<th>Specification</th>
<th>Scale</th>
<th>Symbol Size</th>
<th>Enlarged Map Scale</th>
<th>Contour Interval</th>
<th>Print Method</th>
<th>Approved Printer</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Long Distance</strong></td>
<td>ISOM 2000</td>
<td>1:15,000 or 1:10,000</td>
<td>100%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Middle Distance</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Sprint</strong></td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td>100%</td>
<td></td>
<td>2.5m or 2m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1:4,000</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Urban</strong></td>
<td>ISSOM 2007</td>
<td>1:5,000</td>
<td></td>
<td></td>
<td></td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Relay</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
<tr>
<td><strong>Night</strong></td>
<td>ISOM 2000</td>
<td>1:10,000</td>
<td>150%</td>
<td></td>
<td>5m or 2.5m</td>
<td>Offset litho or Laser/digital</td>
<td>Not required</td>
</tr>
</tbody>
</table>

These are recommendations and not mandatory.

Score and Ultra Long Distance events: maps should use the appropriate specification.