

Submission from the ONZ Mapping Committee

To ONZ Technical Committee

5 Oct 20

## Revision of Competition Rules for New Zealand Foot Orienteering Events

Thank you for the changes that you have made to the Draft ONZ Rules so far. The Mapping Committee submits that the latest draft still does not **ensure** legible maps for all orienteers.

Older orienteers will get reduced enjoyment through deterioration of their eyesight. Full appreciation of this is not apparent to many younger planners and controllers. The “loopholes” remain, which enable avoidance of suitable enlargements.

In this submission we present extracts from a Swedish study of vision versus age in an orienteering context, and the wordings which we believe have and will allow avoidance of enlargements.

This is the most crucial part of our submission. We have found a few other parts of the rules which we think could be improved and we describe these too.

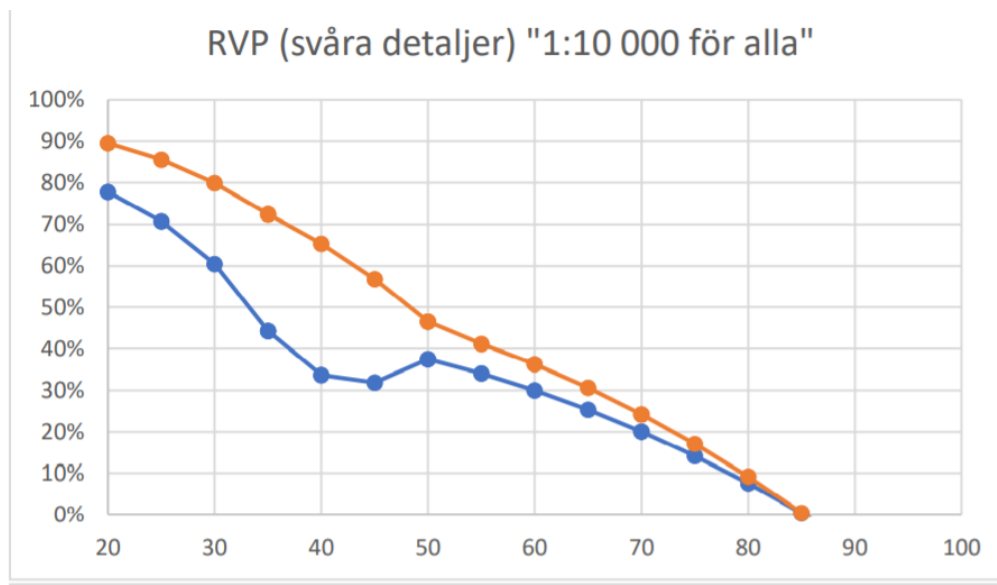
### Map Enlargement for Young and Old Orienteers

There are many contributions to map legibility and we can address some of them by encouraging adoption of the latest specifications, and guidance on good mapping. But by far the biggest contribution to legibility is a scale which recognises eyesight.

There is a trend to more detailed terrains and more detailed mapping – events use “detail” as a marketing feature. It is a fact of life that mappers put in detail to the extent that the specifications allow.

The specifications however are written for elite competition – orienteers in the prime of life. A 2018 Swedish Orienteering Federation study shows the extent that visual ability decreases with age. Depending on map type, its graphs of “relative visual performance” show a decline to about 50% at age 50. **That includes some of you.** And to under 30% by age 70.

Here's a typical graph from the study. The orange line is the 97.5-percentile and the blue is the 2.5-percentile, so that 95% of the population fall between the two lines.



We would need a scale increase of 2-4 times to provide the same visual experience for veterans that an under-30 orienteer gets. That's hard to provide, given that physical speed is not dropping as fast. But we need to guarantee that older orienteers get as large a scale as can be managed. The enlargements we have asked for are barely enough. And you have recognised this in your example table in Clause 15.2.

However ***an example is not a requirement***. You have left the door open for minimising or avoiding enlargements. The call for "judgement" will bear fruit sometimes but not always. It is common that planners and controllers don't always recognise their own eyesight deterioration, it happens very gradually. How many of you know that your visual performance is say 50%?

The use of ***the word "should" in several places provides another loophole*** for avoiding enlargement – for example the draft can be read as allowing a middle distance race to be provided at 1:10,000 for elites and 1:10,000 for all other ages too.

***It is sprints that we are most worried about.*** In this discipline navigation and route choice decisions often depend on small gaps. We need to know not only "how fast" but "whether" we can pass at all. The draft can be read as allowing 1:4000 for elites and 1:3000 for everyone else. In fact that's what the website lists for the 2020 Nationals.

A 133% enlargement is quite insufficient for many of our senior orienteers – please refer to the graph above. Plus the draft rules have only provided a "should" - not a "must".

We have suggested alternative wordings, and given you our minimum enlargement principles. Please ensure that orienteering is a sport for all and not just those with younger eyes.

For a Google translation of the full Swedish paper we recommend you read [www.mapSPORT.co.nz/mapresources.html](http://www.mapSPORT.co.nz/mapresources.html)

## Other Suggestions

We have some other suggestions too. Sorry that we have been concentrating on veteran scales before now – but that is our greatest concern.

### ***Clause 15.2 Elite scale for the Sprint.***

For elite classes, we notice that you have used the word “should” for the scale for the long and middle distance, and “must” for the sprint.

***For elite scales only***, we are happy with “should” and with controller judgement. We know there are terrains in New Zealand which are interesting, enjoyable, and simply cannot be mapped strictly to ISOM. Naseby goldmining, and The Rockery, are examples. Further, our almost universal use of laser printing means we don’t get as crisp printing as is possible with the offset method envisaged by the IOF. We endorse a limited variation of the elite scale for non-IOF events. (***Provided that non-elite classes get enlargements from that base.***)

We think that the same applies to sprints, too. HP Director Malcolm Ingham has made comparisons between the building detail in our typical campus sprint maps compared with the “city block” typical of many European sprint maps. And of course we print with laser printers. We would not be averse to larger elite sprint scales. (***Provided that non-elite classes get enlargements from that base.***)

We are confident that controller judgement would be used for enlargement, rather than for shrinking. There is no likelihood that a controller would want to go back to 1:5000 for championship sprints, or to 1:20,000 for forest events 😊

### ***Clause 15.1 Special NZ Symbols***

Those old uses of special symbols would surely not apply to A-level events any more. It’s good to have them but there should be words indicating that they might appear on older maps, or events at a lower level.

### ***Clause 17.2 Out of Bounds Symbols***

In the forest not-to-be-used symbols, 520 is shown with one of its colours (black) but not the other (olive green). In the Sprint not-to-be-used symbols, we recommend you add 714 Temporary construction or closed area.

### ***Clause 17.2 Different Out of Bounds for Forest***

The mapping specifications use terms like “impassable cliff”, “uncrossable marsh” etc, but we understand that this is a relative term and for forest events they may be attempted. This is not at all obvious to most orienteers, indeed the words “impassable”, “uncrossable” etc might appear in map legends and be taken to have their normal English meanings. It should be made explicit that in forest orienteering you MAY attempt to cross or pass 201, 301, 307, 410, 510, 515, 518, 521 and 529.

### ***Clause 17.2 Events that are Neither Forest nor Sprint***

While at A Level events may be categorised as either “forest” or “sprint” there is fairly widespread use of the sprint spec, or something like it, for club events which may use rural or reserve areas. As the “do not cross” areas differ between forest and sprint, we would look to the rules for guidance on which “do not cross” areas would apply in these cases.

### ***Clause 17.3 Compulsory Route Symbols***

Since the mapping specification is not to be relied on for features that are not to be crossed, we submit that the symbols for compulsory routes, passages and crossing points should be included in the rules too. The relevant symbols are 707 and 710 (short and extended shapes).

### ***Clause 18.2 Control Description Size***

While not directly related to mapping, we note that older orienteers may also have difficulty reading control descriptions. We understand the IOF definition provides a table structure for pictorial descriptions with boxes 5-7mm high.

The pictures themselves can usually be discerned at the 5mm size but the control codes can be hard for older orienteers to see. Digits such as 5 and 6 may be confused for example, and feature sizes= text is smaller still. We submit that these box sizes need some minimum values - perhaps aligned with the age steps for map enlargement of M/W40 and M/W60.

### ***Appendix 2. Consistency of Map Scale Wordings***

The line in the table on Map Scale is inconsistent in that sometimes enlargements for non-elite classes are given and sometimes not. The text sections 1.3, 2.3, 3.3 and 4.3 are similarly inconsistent, and in some cases wrong, see below. It may be better for clarity and document maintenance to talk here only about the scale for elites, and leave the enlargement issues for section 15.

An example of inconsistency about map scales in Appendix 2 is the Relay. The “map scale *IS* 1:10,000”, but then, “the decision on map scale....” Given that the relay format must accommodate runners of any age on any leg, we think it would be best to avoid talking scales here. When Appendix 2 is put into an events manual it may be possible to write something that covers the situation.