Mapping Bulletin

Orienteering NZ Mapping Committee 28 May 2019

Summary: This bulletin covers basemap production; more changes to the IOF mapping specifications; and some views on appropriate map scales. The first section is written at a club management level, followed by more detail for mappers. Stop reading when your eyes begin to glaze over 😊

Government Push for Lidar Surveys

A recent announcement shows government support for Lidar surveys through the Provincial Growth Fund. For the significance of this see our December 2018 mapping bulletin, Lidar is hugely superior to photogrammetry and provides many additional benefits for orienteering mapping. But only part of the country is covered.

Some regional and local councils have been allocated PGF money to expand the coverage, and we can expect the data to be available free thru the LINZ or OpenTopo websites. The process of letting these contracts through to data availability will probably take a couple of years though.

A second round of PGF funding will be made in 2020. Councils may be willing to stretch their survey areas to include potential orienteering maps. They may want a contribution to the survey costs as they have to part pay themselves. But remember they are going to get a big contribution from the PGF so may look kindly on your requests. Michael Croxford has experience as both a mapper and a council staff member so talk to him about how to proceed. ***nelson.orienteering@gmail.com***

Mapping Specification Changes - Again

Our rules say that we follow the IOF Mapping Specifications. There have been several announcements in recent months. Mappers and controllers for major events should take notice. To help maintenance, clubs should try to get their maps onto the latest specs.

These changes (all with the intention of improving consistency and legibility) are small, and only the most eagle-eyed orienteer will spot the differences. We won't need bulletins for competitors.

- There are small changes to the ISOM2017 for standard maps. The latest OCAD provides new symbols, but the simple way of plugging them into an existing map may cause unexpected differences to colours – testing is needed.

- There's a new version of the sprint specification, called ISSprOM2019. It is optional now and becomes valid in 2020. Conversion of your maps will be similar to doing your ISOM ones, and there may be colour surprises.

Clubs should consider the workload on their mappers. As there are even more specifications in use now, please indicate on your maps or event information, which spec applies.

Mappers – we go into a bit more detail below, but not to the "how-to" level. That may follow, but bear in mind that the Mapping Committee is short-staffed (two).

Scales for Orienteering mapping

Scales have been strictly regulated for IOF events (such as World Ranking Events for elites) but there are some signs of relaxation.

It is well established that young and old competitors need larger scales than those in the prime of life. For smaller events it is often practical to print at a larger scale for everyone. So while maps are theoretically mapped for 1:15,000, they are commonly enlarged to 1:10,000 and larger.

The IOF is more liberal with sprint mapping. The scale of 1:5000 has disappeared in favour of 1:4000. The new spec recommends 1:3000 for the young, and an unspecified enlargement for the old. Of course eyesight deterioration has no limit. Comparison with ISOM suggests enlarging at least to 150%, ie 1:2666; or if you prefer a round number 1:2500.

There is no need to wait until 2020 to enlarge sprint maps. Detail on urban maps is harder to see than on rural maps – and can be crucial.

Conclusion

There is further detail below.

Both members of the Mapping Committee will be at the QB 3-day event. They would welcome comments and questions about these or other mapping topics. Or you can email the convenor at any time: ***michael.wood@mapsport.co.nz***

Distribution

This bulletin goes to regular mappers known to the Mapping Committee, and ONZ clubs.

Appendix: More Detail for Mappers

ISOM2017 Update

ISOM is the specification for standard orienteering maps. A major revision was published in 2017 and took effect at the start of 2018. We have published orienteer advice and map conversion advice on the ONZ website. The specification itself is on the IOF website, in the Mapping section: ***www.orienteering.sport/mapping***

In spite of the years it took to revise the ISOM, further updates were published in late 2018. And updates to the updates in April 2019. Yes really! So the first message is that the current spec is evolving and you have to be careful to get the latest. At the time of writing it is called ISOM2017-2.

Mappers who have the latest version of OCAD can obtain an empty file with the 2017-2 symbols in it by choosing File->New. OCAD also provides a converter from ISOM2017 to 2017-2. For those not on the latest OCAD, we have posted an OCAD11 version of this symbol file at ***www.mapsport.co.nz/mapresources.html*** OOM users can open this file too.

Considerations

- These new symbols come with NEW COLOURS – that is, the CMYK recipes for digital printing. You may be surprised. We deal with this in a section below
- You cannot simply wheel in these changes to a map which has not already been converted from ISOM2000 (the old spec). The many changes to the symbol and colour numbers will create havoc.
- If a map has symbol variations, or additional symbols to help drawing, you'll have to add them in again.

To cope with changes like this, we recommend that clubs get their maps onto the latest spec.

Colours for Digital Printing

This is a complex area due to the variety of printing technology. Here is a view to the best of our ability. We have drawn on the Attackpoint forum ***www.attackpoint.org***

The IOF is wedded to offset printing. Offset printing was expensive, and is just about dead. There is a replacement technology called "digital offset" which it allows. This is high-end equipment - rare and expensive.

Most of our affordable printers use ordinary digital printing, in which dots of Cyan, Magenta, Yellow and Black are cleverly dropped on the paper to create the colours we want. The

”dottiness” of the result means that fine lines are not perfect. And every printer (machine) does it differently. And it’s different on different papers.

This means there is no guaranteed CMYK recipe for ordinary digital printing. OCAD and OOM give us values with their symbol sets (see above). We are supposed to match our colours to a test sheet supplied by the IOF, by tuning the CMYK values. In practice we get used to what we’ve always had. Only a few mappers have the time and skill to optimise.

The problem is, in giving us new symbol sets (see above), OCAD has used new CMYK values. Its values follow IOF recommendations for “digital offset”, published on the IOF website as “Appendix 1 CMYK Printing…” But we don’t USE digital offset. There are noticeable changes, particularly to blue. Someone described it as like having algae in the water!

Bottom line: if you adopt these new symbols, you’ll have to either

- Take steps to then over-write the CMYK values with the ones you have been using
- Fine tune the CMYK values to get the colours you are used to
- Put up with changed colours

Yes its messy. We suggest you make a master copy of an ISOM map you like, and delete all objects. Keep it as a repository for symbols and colours. With some restrictions, you can transfer colours from this file to any other.

If you change process (eg course setting software), your printer, or your paper, you should test these colours right through to the printed result.

New Sprint Spec ISSprOM2019

IOF has announced a new version of the Sprint Mapping Specification. ISSprOM2019 is optional now, and becomes official at the start of 2020. Find it on the IOF website ***www.orienteering.sport/mapping*** There’s a “What Has Changed” document.

We don’t believe we need to write anything for competitors about this. The question of what you are not permitted to enter or cross is being transferred from the mapping documents to the rules and this might cause a need for some advice from the Technical Committee.

Converting maps will be similar to the ISOM conversion. Many symbol numbers have changed, so you can’t simply wheel in a new symbol table; and automatic conversion routines have “fish-hooks” The latest OCAD provides the new symbol set BUT they incorporate the “digital offset” colours which may not be appropriate for us. We have provided an OCAD11 version of the new symbol set at ***www.mapsport.co.nz/mapresources.html*** OOM users can open this file too.

With sprints being relatively new you won’t have a lot of ancient maps to convert. We would urge you to change them all over. It will reduce confusion and maintenance in the long run.

As there are even more specifications in use now, please indicate on your maps or event information, which spec applies.

Scales for Orienteering mapping

Scales have been strictly regulated for IOF events, but there are some signs of relaxation.

1. Standard orienteering maps are supposed to be mapped "as if for 1:15,000" and this remains. IOF has previously allowed enlargement to 10,000 for the middle distance and relays. It has now opened the door a chink, and extended it to the long distance, if you go on your bended knees.

2. The above applies to elites. Club events cater for young and old, and it is often practical to print at a larger scale for everyone. Many clubs enlarge still further to 1:7500 and 1:5000. Note that these are straight enlargements, the detail that is depicted is given by the symbol sizes and the 1:15,000 requirement.

3. There are areas that can't easily be mapped like this. Examples are the Naseby gold-mining, and rocky mazes like "The Rockery". A legible map can only be made at a larger scale without increasing the symbol sizes. Such mapping does not meet the rules but can give delight to many orienteers

4. For some reason the IOF is more liberal with sprint mapping. The standard scale used to be 1:5000 OR 1:4000. With 1:5000 being seldom used, 1:4000 is the only scale in the new ISSprOM

5. That sprint scale applies to elites. The ISSprOM encourages enlargement to 1:3000 for the young, and an unspecified enlargement for the old. With standard mapping being widely produced at 150% of IOF, this suggests 1:2666 for sprints, or 1:2500 if you want a round number. The difficulty for older eyes in urban terrain (small gaps etc) is much tougher than the rural environment.

6. The new sprint spec has some other legibility benefits too. The contour interval on steep terrain may now be 5m. The small dashed black track is enlarged (it was inexplicably small before). The hard to see gray passable wall is now the black line with blobs like the standard spec, and it has half-blobs where it is one-sided (ie retaining wall). The changes document is well worth reading.

These changes may help clubs who feel they want to "map by the book" but their older orienteers can't read the maps. Legibility is vital for the enjoyment of our sport.