

International MTBO Mapping Specification Revision

Response Part Three by Michael Wood

OFF-TRACK TRAVEL

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INTRODUCTION

Thank you, Steven for the opportunity to take part in the evolution of the MTBO Mapping Specification.

In my previous response I outlined the NZ MTBO environment and made some comments on the draft version 13.2 of the MTBO mapping specification. I delayed Off-Track Travel – now here are my thoughts on that.

This is important to us. In general New Zealand does not allow off-track travel. This is because most of it is impassable with a bike. There are no widespread community or legislative barriers though.

However there are many places where we want to *specifically* allow off-track travel. In order of frequency:

1. Where there are possible short-cuts, for example where tracks come close together. We know there can be cheating, accidental or otherwise. We cannot possibly check compliance, so we want to map and allow short-cuts wherever we can. This is a matter of fairness.
2. Where firm ground allows riding - route choice and navigational challenge are improved. Many areas allow a little of this, but we have a few where we can ride off-track over large areas. These are mostly open areas.
3. A special case of #2 is urban areas with sports grounds and parkland. There may be mature trees which are mowed underneath. There are usually areas which are out of bounds for gardening or residential reasons.

Just as riding speed is important on the tracks, we should indicate travel speed in these off-track zones. Fair route choices can only be made if off-track speed can be related to track speed. Dense forest, if allowed, will contain a lot of variation. And so will rough open.

I've looked at the draft proposals on some NZ maps representing the above three situations. I have pasted in bits of map here – let me know if the OCAD files would be better. Please excuse me for any misunderstandings of the draft, and of MTBO conditions in other countries.

There's a summary and conclusions at the end.

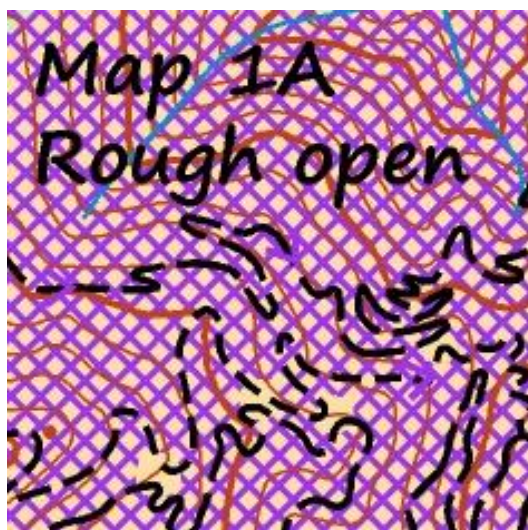
EXAMPLE MAPS AND TREATMENTS

I have looked at three representative New Zealand maps, called Maps 1, 2 and 3. For each I have drawn a sample area according to the Off-Track treatment:

- A. Declaring off-track travel **generally allowed**, and using the draft “out of bounds” symbols
- B. Declaring off-track travel **generally forbidden**, and using the draft “allowed to ride” symbols.
- C. Adopting **current NZ conventions** for showing where off-track travel is allowed. The NZ conventions are at <http://www.orienteering.org.nz/wp-content/uploads/2014/02/nzmtbomapping3a.pdf>

Map 1, short-cuts when tracks come close together

Using method A, most of the sample map would be covered in purple hatch. We wouldn't be able to see contours and other features; and even the track detail is compromised. We can't see directional arrows and obstacles. This method does not work for us.



Using method B, the small areas of “allowed to ride” in open forest are not visible. They are visible in dense forest but only because of the white and the dots are barely visible in the small shortcuts. The powerful yellow is visible in scattered trees and rough open. We wouldn’t expect to find twisty tracks in smooth open. NZ could use this method if we mapped all not-allowed forest as “dense” (This is in fact what we do).



In method C the allowed short-cuts are visible in green, scattered trees and pale yellow background. We wouldn't expect to have twisty tracks in a full yellow background. We have provision for limited darkening of the green, strengthening the full yellow, and lightening the pale yellow to make any small patches stand out

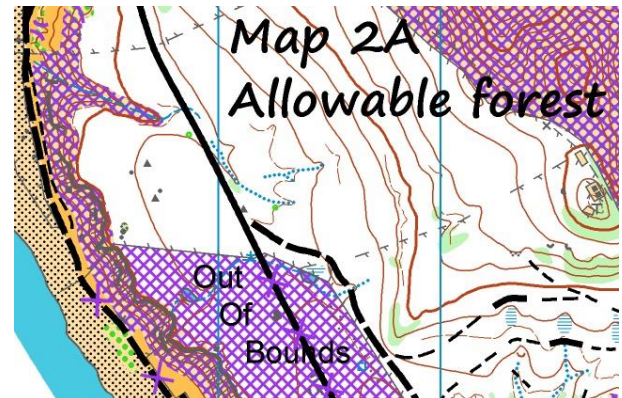
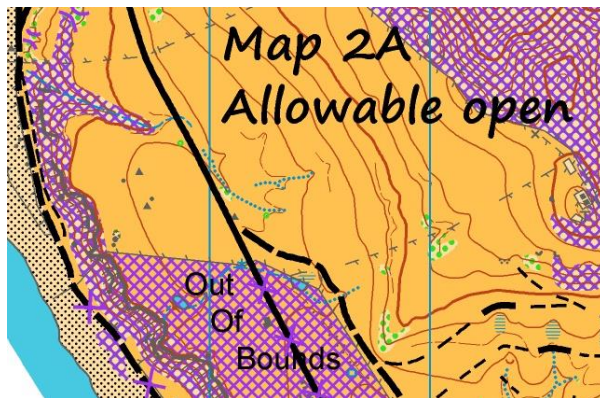


Off-track speed indication.

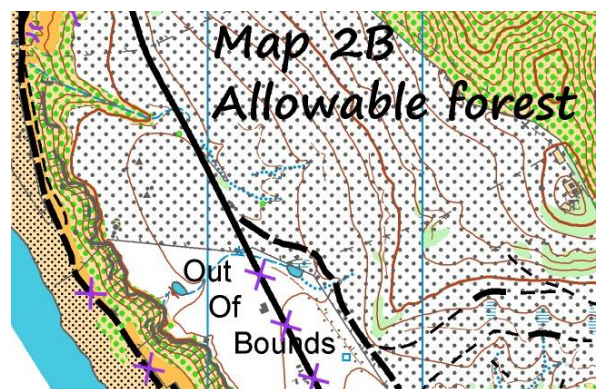
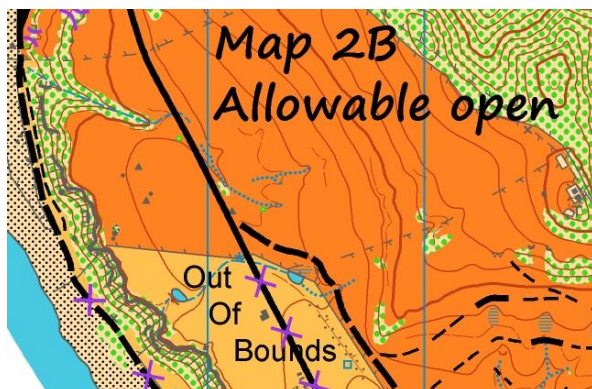
None of the methods gives speed information but since short-cuts are short this is not significant.

Map 2 has large areas of rideable open land or forest

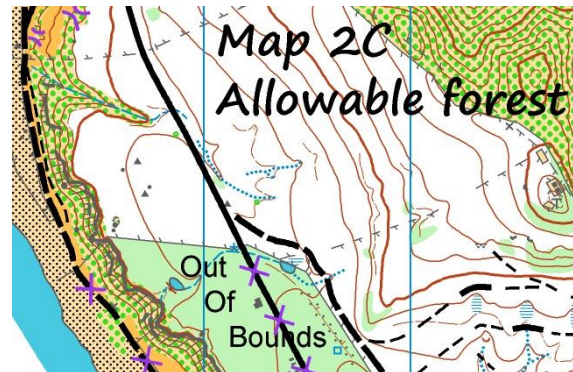
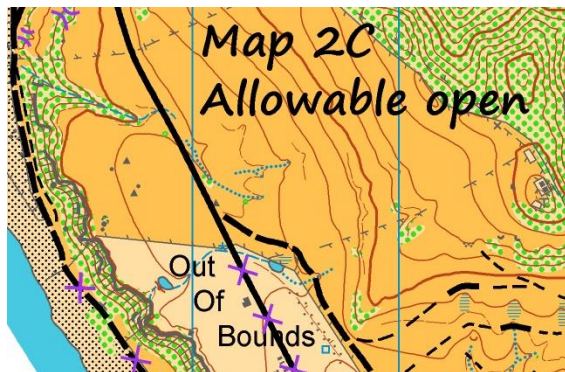
In method A the standard yellow and white work much better in the passable zones but the out-of-bounds cross-hatch would make the rest of the map unreadable. This would work if there were no or very insignificant out of bounds zones. This would be quite rare for us, so this method would not usually work



In method B the strong yellow makes the contours and reduced black features hard to see. In such areas these are needed for navigation and control sites. The dotted white for forest does the same. We note the suggestion in the example at the end of the draft, to cut the symbol around features but this would be a tedious job. So this method would work with drawbacks.



In method C the standard yellow and white allow reading of necessary off-track detail. Out of bounds is indicated by pale yellow and green. (We have provision for darkening the green, strengthening the full yellow, and lightening the pale yellow to make small patches stand out.)



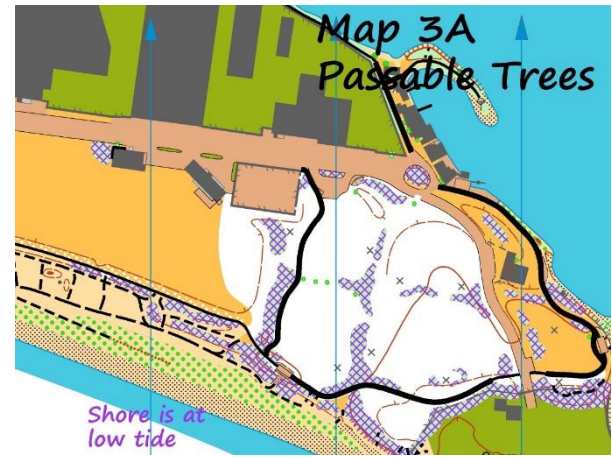
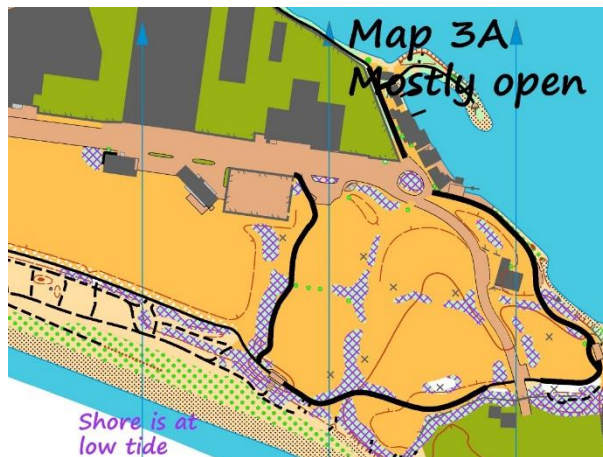
Off-Track Speed Indication

Methods A and B don't give any speed information relative to the track network. The white/green option implies a speed difference but lack of specifics means that there is no worldwide standard. The wording "dense forest" in 406 would suggest riding is not possible and maybe not even walking with a bike; but the term "reduced rideability" suggests riding.

We advise that our passable colours are equivalent to slow riding, as the most likely. That's not always accurate but its better than what the spec provides.

Map 3 is an urban map with sports fields and rough beach vegetation.

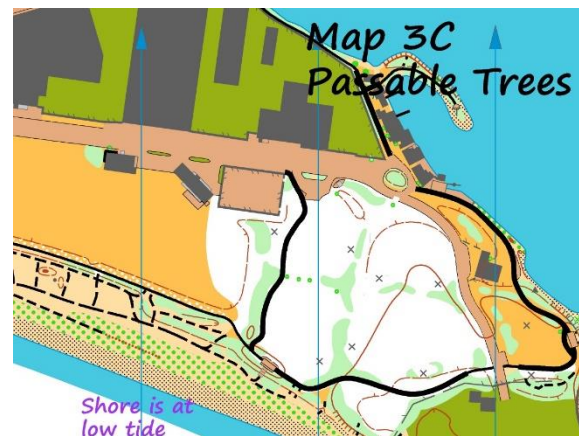
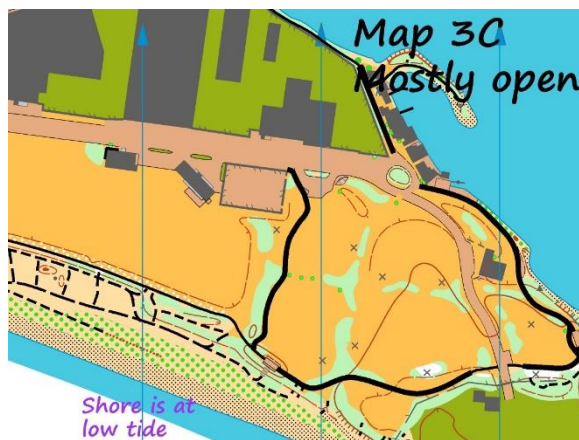
Method A is good, I think off-track details would be visible. But vegetation which is not passable with a bike has to be marked out of bounds, and there's a lot of that in urban parks (including that which city authorities would not welcome attempting travel even though it might be physically possible). Scattered trees may be shown. Pale yellow implies a speed reduction towards the beach. The method would work.



Method B is reasonably good in this case, but there are few off-track details on this map. If there were they would be hard to see against the strong yellow or dots. The draft does not provide for rideable scattered trees and this is quite common in urban parks. I've used green stripes over yellow on the beach to indicate slower travel and they don't stand out well either. The method would work but is not ideal.



Method C is almost the same as Method B but NZ conventions would disallow travel on the rough beach vegetation which is actually passable and allowable. OTOH its not necessary to mark the green vegetation out of bounds.



Off-Track Speed Indication

Methods A and B don't give much speed information relative to the track network. The white/green option implies a speed difference but lack of specifics means that there is no worldwide standard. The wording "dense forest" in 406 would suggest riding is not possible and maybe not even walking with a bike; but the term "reduced rideability" suggests riding.

We advise that our passable colours are equivalent to slow riding, as the most likely. That's not always accurate but its better than what the spec provides.

We think that the ISSprOM might be fine for this situation, in conjunction with

- (a) Forbidding travel in dense vegetation and rough/scattered trees
- (b) 401 and 402 with white dots equivalent to medium track speeds
- (c) 403 and 404 with white dots equivalent to slow track speeds
- (d) We wouldn't change fast tracks from their ISSprOM symbols. We would only use the black track symbols for medium, slow and very slow riding.

SUMMARY AND CONCLUSIONS

Map 1 Short-Cuts in Dense/Rough/Steep terrain

On Map 1 there are four places where tracks come close together and we would want to allow shortcuts, and forbid travel everywhere else. We *couldn't use "generally allowed"* as the widespread purple cross-hatch for everywhere but the tracks and the short-cuts would make the map illegible.

We *could use "generally forbidden"* here, with allowable colours on the short-cuts. 824 is visible in rough open and scattered rough. 825 is not visible in 405 forest but is visible via its white colour in 406 green forest. The dots are almost impossible to see in small patches of 825 even though we exaggerate the size of the patch. We would sometimes want to put an obstacle or a fence in the short-cut and this would further hide the dots. It is only the colour difference that stands out.

Conclusion: We could use "generally forbidden" in this case if we mapped all "not allowed" forest as dense, and all "not-allowed" open as rough or scattered rough. We don't need the dots in 825 and we don't need the very strong yellow of 824. (This is our current practice.) Neither method gives speed information, but this is OK as long as the short-cuts are short.

Map 1 represents the most widespread off-track situation in New Zealand. The off-track travel is essential for fairness.

Map 2 Large Area of Rideable Open or Forest Terrain

On Map 2 there's a large terrace of open* land bounded by land impassable for biking – scattered scrub and/or cliffs. There are some man-made, rock and contour features. * We have considered the possibility of the land being covered in rideable forest too.

We *couldn't use "generally allowed"* here, as the use of purple cross-hatch makes the adjoining areas illegible. The adjoining areas contain useful information when near the border including contours and whether forested or not. And perhaps the adjoining area might have a track network in it like Map 1, where the cross-hatch is unacceptable.

We *could use "generally forbidden"* and 824 or 825 to show the allowable area. We note there is no symbol for "scattered trees permitted to ride". Both the strong yellow and the dots reduce the legibility of contours and other features in the allowable area. And in this area navigation and control sites depend on these features. Although not present here, we may have obstacles (eg fences) and barriers (eg cliffs) that influence route choice.

Conclusion: We could use "generally forbidden" in this case but legibility is less than ideal in the allowed areas. There would be an improvement if we used standard bright yellow (and white if the area was forested); if we mapped the "not allowed" forest as dense; and the "not-allowed" open as rough or scattered rough.

The draft gives no speed information about the off-track travel, except that 407 may be used. We suppose that 824 and 825 would most likely be similar to "slow" tracks.

We note that an area could combine aspects of Map 1 and Map 2, so the off-track setting would need to be the same. Fortunately, “Off-Track Forbidden” would be best for us in both cases 😊

Map 3 Urban Area

Map 3 is an urban area with sports fields and rough beach vegetation. Private land is shown with 520 olive green.

We *could use “generally allowed”* here, but the many areas of dense vegetation have to be marked with purple cross-hatch – as they are maintained by city park staff. (Or perhaps they could be olive green.)

We *could use “generally forbidden”* too. As above we note there is no symbol for “scattered trees permitted to ride” which is common on maps like this. Both the strong yellow of 824 and the dots of 825 reduce the legibility of contours and other features in the allowable area, which might be used for navigation and control sites. And we might have obstacles (fences) and barriers (cliffs) that influence route choice. As this terrain is best suited to short events, seconds may count.

Conclusion: we could use either but have a preference for “generally allowed”. When converting an ISSprOM map we find it strange that the wide gravel paths (which become track fast riding) appear much more prominent than paved areas and paths/roads. We think that ISSprOM symbols used at 1:5000 could almost be used for urban events. Of course we would want much less detail for MTBO.

Overall Conclusion

The option of Off-Track “generally allowed” and “generally forbidden” may allow different countries/terrains to arrive at a solution which suits them. New Zealand will probably remain with “generally forbidden”.

We find that 824 and 825 reduce legibility where it is especially needed. We would want to continue with 401 and 405 to indicate permitted to ride; in conjunction with mapping not permitted forest as 406 dense and not permitted open as 403 rough or 404 rough/scattered.

In doing so we give up the ability to distinguish open forest and dense forest. This is a good thing, since travel speed in dense forest is likely to be either very slow or worse, variable. This allows chance to influence the results. The same applies to rough ground.

For countries where community and legal norms prevent any off-track riding, these colours may have been used for navigational information as seen from the track. We have even seen them used for tree species. We think that’s only a “nice to have” feature. Given the serious drawbacks of 824 and 825, we need to use these colours to represent “allowed to travel”.

For urban areas we may choose as above, or we may choose “generally allowed”. It’s not ideal to have two different sets of rules, but there’s a precedent in foot-o where there are different forbidden rules for sprints and forest.