

Sprint Orienteering Maps: a Challenge for Map Maker as well as Athletes

It appears so easy to draft a sprint orienteering map. However, it is very time-consuming to draw steps with exactly the same spaces in-between or a tree-lined alley in perfect alignment. For that purpose, the newest OCAD version offers lots of new functions to greatly simplify the drafting of such objects on sprint orienteering maps.

Since 11 years, sprint orienteering has become a permanent feature in the WOC program. Sprints are also established in the Swiss competition season with many sprint orienteering meets. This may also be a reason why Swiss athletes have been able to win regularly in international sprint competitions as happened at WOC this year in Lausanne. They have successfully learned to decide in split seconds on route choice problems while running at a very high pace.

Surveying a sprint orienteering map is equally a big challenge. The greater map scale 1:4'000 requires a lot more precision while drafting and also allows to depict lots more details than maps with a 1:15'000 scale. Most digital data from base maps can be used thus eliminating the re-drafting of buildings and streets. However, only at this point the time-intensive detailed work is starting. Alleyways that are narrow and passageways have to be widened so they can easily be perceived during fast running. Fences, walls and hedges have to be added to show their passability. Trees, awnings and sidewalk edges are depicted to alleviate navigation. Doing all this work requires lots of patience. It is very difficult to read the map when steps are drawn in unequal spaces, tree-lined alleys that are not placed in perfect alignment or sidewalk edges that are not parallel to each other not to mention the unaesthetic impression the map conveys.

OCAD 11 with specific functions for sprint orienteering maps

New functions for OCAD 11 were prioritized to simplify the drawing of sprint orienteering maps besides the development of evaluating features for digital elevation models (see Swiss Orienteering Magazine, July). Basically, symbol and editing functions were provided with dialogue windows. They serve to enter distances such as spaces, diameters or length either in meters or millimeters (paper coordinates). With the function: „parallel shifting with a space“ one can very simply construct sidewalk edges exactly 2.5 meters parallel to the existing property boundary.

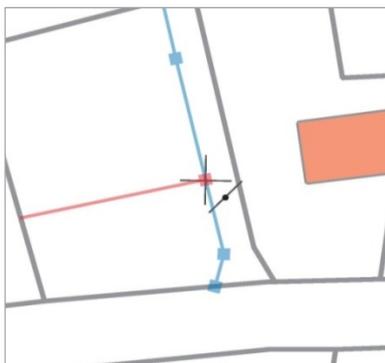


Fig. 1: Snapping: By switching the cursor icon point it shows whether a new line is placed exactly on the line, on a base point or at the end of a line.

Another basic innovation is the drafting and editing option «snapping». If one approaches an existing line with the cursor, then the closest base will automatically be shown. Releasing the mouse button at this point, that base is going to „snap“ to the end of the new line (see fig.1) and the new line fits exactly onto the existing line. This „snapping“ can be applied not only for lines but also for surface areas as new but also existing objects such as fences, walls and awnings are simply and very exactly added (or snapped) onto existing objects.

Drafting of stairs, the cartographical challenge!

It is easy to judge the mastery of a draftsman by looking at the drafted stairs. One of the most elaborate tasks in cartography is to draft stairs parallel in exactly the same intervals. For simplification, OCAD 11 offers 2 new functions!



Fig. 2a: The curved stairway in the finish on the WOC sprint map „Ouchy“ drafted with „interpolating“

Fig. 2b: The angular stairway on the WOC sprint map „Dorigny“ drafted with „interpolating“.

Using the drawing mode „Stairs“, one presses down the mouse button and the length of the step, then the width and finally the depth of the first step can be drawn. If one then releases the mouse button the remaining number of steps is calculated and automatically displayed. This function is especially useful for staircases in a right angle with varying width. However, if the stairs have curved steps or corners (see fig 2a and b), the second function „interpolate“ is used. With this feature a random number of steps between the highest and the lowest step can be interpolated.

Beat Imhof, one of the most experienced surveyors of sprint orienteering maps loves this feature. „This is my feature“, he says, „I use it very often and it is also useful for many other objects such as tree-lined alleys, hedges or contour lines“. He also adds that „this feature alleviated the drawing of the sprint orienteering map for WOC in Lausanne significantly and I would not want to miss it anymore“.

At a first glance, drafting sprint orienteering maps seems a simple task. „However, experience shows that for both surveying and drafting the effort is much more involved than when drafting a traditional „forest“ orienteering map“ says Fritz Rufer, head map consultant with Swiss Orienteering. „Those are cartographical masterpieces and OCAD 11 offers numerous features to reduce the effort.“

Specific features for sprint orienteering maps included in OCAD 11

- Snapping (only in OCAD Professional)
- Moving parallel with spaces
- Interpolating objects
- Moving objects and duplicating with spaces and angle
- Punching objects
- Mirroring
- Stairway mode
- ReShape
- Drafting several point objects
- Removing over- and under-shoots
- Setting intersecting trim marks