Know your sport: Where do orienteering maps come from?

All orienteering events need maps. The rules of the sport start with the following statement:
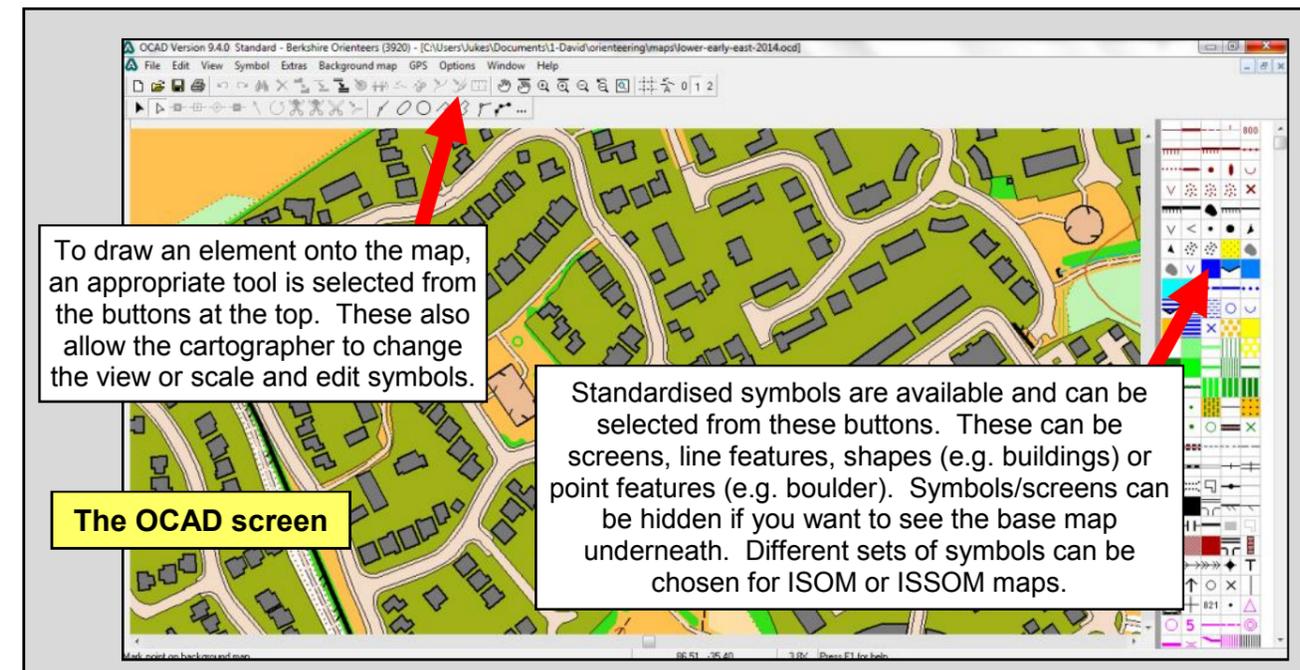
*"Orienteering is a sport in which the competitors navigate independently through the terrain. Competitors must visit a number of control points ...aided in navigation by **map** and **compass** only."*

So where do the maps come from?

When the sport started here in the UK, the early events used black and white photocopies of Ordnance Survey maps. Quite quickly though the limitations of these were recognised. Many OS maps were years out of date, their accuracy was very variable at the level of detail used in events and many features useful for navigation were simply missing from the maps. In the late sixties, orienteers started to go out into the areas and began drawing updated versions. Initially these were then photocopied in black and white but eventually maps were drawn with pen and black ink on drafting film with different sheets for each colour for subsequent professional printing into multi-coloured orienteering maps.

As maps were being drawn by orienteers, standardised international symbols could be used so that any orienteer would interpret the map in the same way - these are now laid down internationally and are known as ISOM and ISSOM (*see box on next page*). As the sport had been developed earlier in Scandinavia, the standard symbols had already been developed and these were adopted in the UK.

With the development of computerised drafting, the pens and ink were dropped and digital maps were prepared electronically. The most common program used for this is 'OCAD'.

1. Base map used for surveying

2. Map drawn on a computer using OCAD

3. Control at event

This illustrates the key stages leading to an event:

(1) Using various different methods, a base map is obtained.
(2) By surveying and computer plotting, a map is drawn.
(3) A 'planner' uses the map to plan the location of the controls and places the control marker on the features before the event starts.

To draw an element onto the map, an appropriate tool is selected from the buttons at the top. These also allow the cartographer to change the view or scale and edit symbols.

The OCAD screen

Standardised symbols are available and can be selected from these buttons. These can be screens, line features, shapes (e.g. buildings) or point features (e.g. boulder). Symbols/screens can be hidden if you want to see the base map underneath. Different sets of symbols can be chosen for ISOM or ISSOM maps.

There are two fundamental components in producing an orienteering map - **surveying** and **cartography**.

Surveying

Starting with a 'base map' the surveyor spends time in the area slowly and steadily walking across the whole terrain to check the base map and to identify all the features which an orienteer would expect to see when using the map. Features have to be identified and then correctly located with respect to the other features and a decision made how it should be shown on the map. In complex wooded areas, this can be a time consuming process; in more featureless areas, it can be quicker but positioning a point feature (a boulder or depression) must still be carefully plotted — taking compass bearings and pacing in different directions to known fixed points will be necessary.

Cartography

Once some surveying has been completed (usually a day at a time), the resulting data has to be converted into the digital electronic version using programs such as OCAD (*see box above*). Initially the base map is set up in OCAD (with the right scale) and then all the orienteering symbols are drawn over the top. This does take some practice and skilled map drawers will have their own shortcuts so as to minimise the work. Eventually the base map can be hidden leaving the finished orienteering map. Depending upon the actual area, for woods the cartography may take much less time than the surveying (but it may not!). However for urban areas, with a much higher density of symbols to draw, the computer work can be considerably longer than the survey.

ISOM and ISSOM

ISOM : International Specification for Orienteering Maps

The standard set of symbols was developed many years ago but the current specification dates from 2000. The basic standard set of symbols is for use on a 1:15,000 map but with permission to provide a 1:10,000 if appropriate. These symbols are used for all of our main wooded, heath or moorland events.

ISSOM : International Specification for Sprint Orienteering Maps

The development of the 'sprint' specification started in 2001 when sprint races were being introduced into the World Championships. After draft versions were published the first official specification was adopted in 2005. Some corrections were introduced and the current ISSOM spec was applied from January 2007. Sprint maps are usually at a scale of 1:4,000 or 1:5,000. ISSOM is commonly used for urban events as well as sprints

To see the official versions of these and other mapping specifications, see:

http://orienteering.org/resources/mapping/