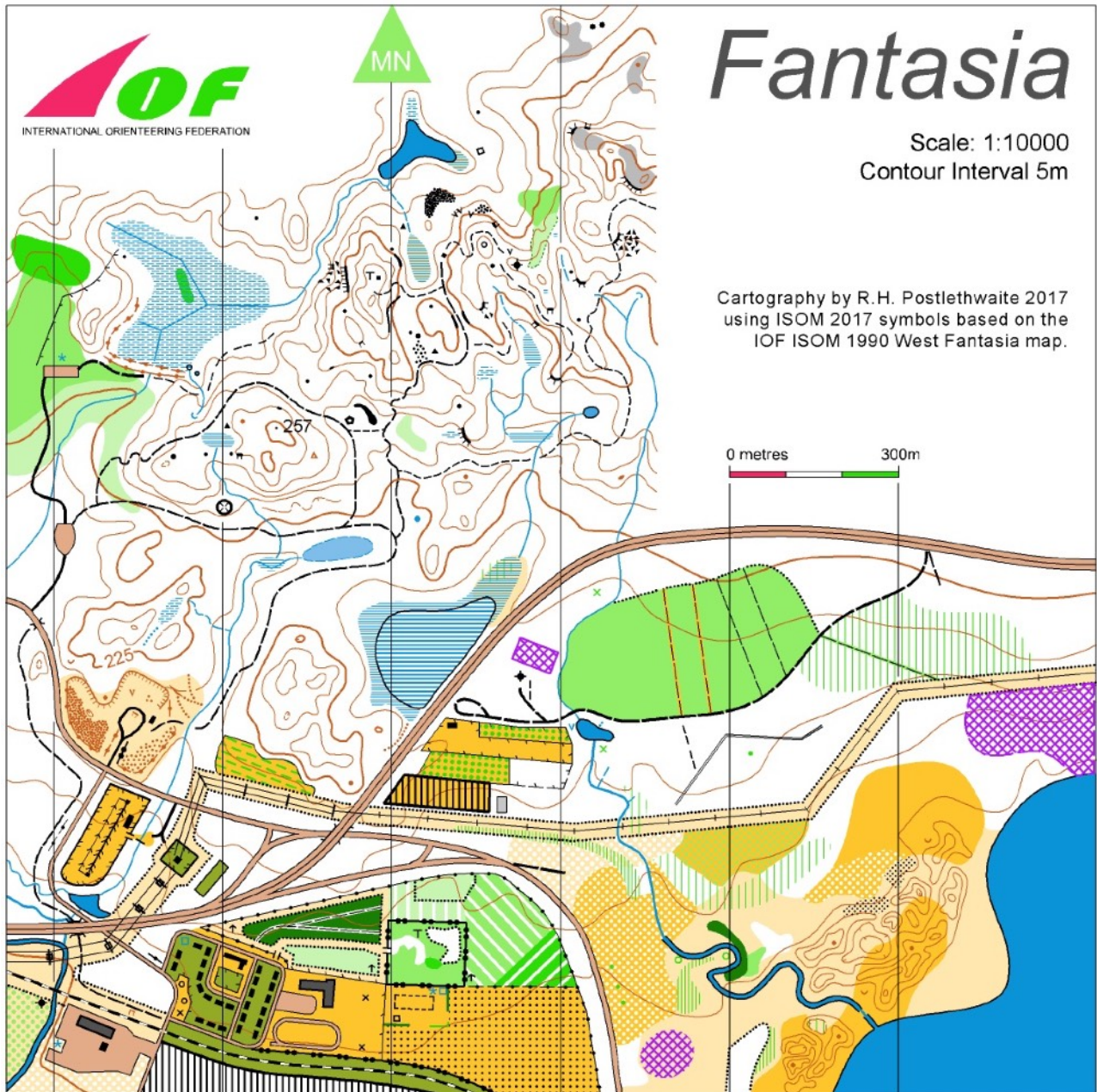


Mapping News

Summer 2017



Editorial

Welcome to the Summer 2017 issue of 'Mapping News' which is designed to keep mappers up to date with all the latest developments in the world of mapping.

Developments in mapping have been moving at quite a pace recently with the availability of free LiDAR data, the introduction of the Open Orienteering Mapper software and, most importantly, the arrival of the new International Mapping specification, ISOM 2017.

To illustrate the new specification, I have produced a fictitious map which includes all the symbols and used it as the front cover for this newsletter. I have also written an article about the new specifications on page 4 which outlines some of the changes and some of the pitfalls including conversions from existing maps.

It is hoped that the newsletter can be produced on a regular basis to share ideas, good practices and anything you'd like to read about mapping. Mapping is quite a solitary occupation and communication between mappers can be a little 'patchy' so if you have anything you'd like to share please send to me at the e-mail address opposite. I can cope with just about any file format for text and images - I look forward to hearing from you.

Rod

Mapping Advisory Group Members

Terry Smith **Chairman**

Steve Barrett

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Inside this Issue

- 2 Editorial
- 3 MAG Chairman Terry Smith
- 4 ISOM 2017
- 6 Contours Outside OCAD
- 8 Open Orienteering Mapper
- 10 Finnish Success with Young Mappers
- 13 Digital vs Offset Litho Printing
- 14 The Holy Grail?
- 15 What Does It Take to Win a Mapping Award?
- 16 Mapping Awards 2017
- 16 News in Brief

Mapping Advisory Group Chairman - Terry Smith



Rod suggested I write a few lines to introduce myself to those mappers who don't know me. I think that was 'payback-time' for inviting him to (willingly) take on the role of Editor and reviving the Mappers' Newsletter. I'm sure you will join me in thanking Rod for taking-on this role and hopefully inundate him with copy for future editions!

I inherited this role a couple of years ago, having agreed to return to the Event and Competitions Committee as Chairman of Event Systems Group. I had previously spent some time as Chairman of the Technical Advisory Group and had sat on the Rules Group and Technical Committee before that. The position of Mapping Advisory Group (MAG) Chairman was vacant and I've taken that on to fill the gap. So, how did I get here?

I was introduced to orienteering by my girlfriend (now wife) around 1977. My main sport prior to that was cycle time-trialling and my attempt to ride a hilly 25-mile time-trial one morning followed by doing a Brown course shortly afterwards didn't end happily for me or the patient finish team who had to wait for a rather tired last finisher!

I'm a (not especially competitive) M65 who has done some mapping. This has included a range of maps from school grounds to updates for the British Relay Championships in 2009. I've helped my club, SOC, with updates to several areas of the New Forest that have been used for events from Level D to Level A.

Some of you may know my name as the author of 'Time Machine' software such as the Badge entry and results program. I applied my computing interests to several systems used for WOC99. and I'm still actively programming and enjoying tinkering with computers and applying them to our sport.

I'm a Level A Organiser and Planner and Level B Controller and have dabbled in most roles in our sport at Club and Association level.

I sense that my time as MAG Chair is unlikely to be long term. My wife and I find ourselves as prospective Co-ordinators for JK2019 so the time I have available to do justice to the role of MAG Chairman is likely to be somewhat limited over the next couple of years. Getting the newsletter revitalised is one objective and the other is holding a Mapping Conference. If you are willing to help with either of these or any other Mapping activities, please get in touch with me at: mapchair@britishorienteering.org.uk

International Specification for Orienteering Maps (ISOM) 2017



ISOM 2017 International Specification for Orienteering Maps



One of the great strengths of orienteering is that you can pick up a map anywhere in the world and be able to understand the symbols and, therefore, effectively be able to compete on a level footing. It wasn't always thus. In the early days of orienteering, topographic maps produced by national mapping agencies (i.e. Ordnance Survey or equivalent) were used and varied considerably in scale depending on what was available. In the very early part of the 20th century 1:100000 maps were actually used so orienteering then was very much different to the sport we know today.

The official maps could be quite old and bear little resemblance to the terrain so, starting in the 1950s, orienteers started to add missing details or even redraw these maps. The symbols, however, varied from country to country and, when international competition started, gave home runners a distinct advantage.

The International Orienteering Federation was formed in 1961 and, by 1969, produced the first international orienteering map specification and was the work of Jan-Martin Larsen (NOR), Christer Palm (SWE) and Ernst Spiess (SUI). This first version was a little different to today's specification in that it was for four colour maps (black, brown, blue and yellow) and was designed for drawing using pen and ink and Letratone screens.

In 1975 the specification was revised and green was added to the list of colours. Subsequent revisions were made in 1982, 1990 and 2000, the one currently in use. Part of the IOF Map Commission's remit is to periodically revise the specification to meet the demands of the sport as it evolves and technology improves. Since 2010 the commission has been working on the revised specification and now it has finally been ratified by the IOF. British Orienteering Map Advisory Group has not yet made an announcement as to the date when all maps must be made using the specification but it would be sensible to gradually phase its implementation so that by the start of 2018 all new maps should utilise it.

What has changed? The answer is nothing too radical but a gradual refinement of ISOM 2000.

Symbols: There are three entirely new point symbols - a brown open triangle for a landform feature (this should be used for platforms as the previous solid brown triangle was a BOF only symbol), a blue asterisk for a special water feature (a rather horrible looking symbol in my opinion) and a black pentangle symbol for a gigantic boulder.

Landforms: The brown form line has been made thinner to improve clarity There are now two densities for the broken ground symbol which are dependent on runnability.

Rock and Boulders: A new symbol for a giant boulder replacing the old rock pillar symbol, though I doubt whether this will get much use in the West Midlands! There is also a new symbol for a trench (typically an old war time rocky trench) consisting of two parallel black lines. Stony ground, like the broken ground symbol, also has density symbols, though this time there are three levels of runnability.

Water and Marsh: To align with the Sprint specification, ISSOM 2007, there is a new symbol for shallow water and the old blue circle for a special water feature has been changed to a blue square to avoid an issue for colour vision impaired runners with the green circle.

Vegetation: A number of symbols have been changed to align the specification with ISSOM 2007. An extra shade of green has been added for totally impassable vegetation; open and rough open land with scattered trees can now have green dots as well as white to indicate the presence of scattered bushes; a green dashed line can be used for a distinct vegetation boundary though this should only be used in very rocky areas (note: the black dot symbol and the green dash symbol should not both be used on the same map); The green circle and green dot are now defined as a prominent tree and prominent bush respectively.

Man-Made Features: The narrow ride now includes a coloured background to indicate runnability. The railway symbol has been changed to the one used in ISSOM for the sake of consistency between the two specifications. Buildings can now be 100% Black or 65% Black (probably the best usage of the 65% symbol is where the map contains an urban section with many houses) and there is now the addition of a grey canopy symbol. The Firing Range and Grave symbols are now obsolete, the latter to reflect that the cross symbol only refers to Christian graves and not those of other faiths.

Technical Symbols: The distance between Magnetic North lines is now 300m in the ground regardless of the final printed map scale.

Overprinting Symbols: The overprinting symbols behave exactly the same as map symbols and are a strict enlargement from a 1:15000 map. The Out of Bound purple symbol is now cross hatching as opposed to vertical lines

Further Reading:

The new ISOM 2017 can be found here:

<http://orienteering.org/resources/mapping/international-specification-for-orienteering-maps-isom-2017/>

as can a list of the differences between the new specification and the old 2000 specification.

OCAD has produced a symbol set for OCAD 12 and 11 which can be downloaded here:

<http://ocad.com/blog/2017/04/international-specification-for-orienteering-maps-isom-2017-symbol-sets-for-ocad-12/>

There are also instructions and a CRT (Cross Reference Table) on this page to help you convert your maps from the old specification to the new but there can be issues with this conversion process if you have used the BOF issued symbol sets and also if you have created any of your own symbols.

Bruce Bryant has noted some issues using ISOM 2017 symbols with earlier versions of OCAD. I believe he has also produced symbol set files for OCAD 9 & 10.

(Please note that the random screens for Broken Ground and Stony Ground will, unfortunately, only work properly in OCAD 12).

RP

Contours outside OCAD

Some time ago, I experimented with some public domain (free) software for processing LiDAR data obtained from the Environment Agency to produce contours in OCAD 6 (free version). This might enable clubs, individuals or school groups on a tight budget to utilise LiDAR technology for mapping. Since then, Open Orienteering Mapper (OOM) software has become available as a free alternative to OCAD.

On 1 Sept 2015 the Environment Agency made their contour data available free of charge for both commercial and non-commercial use. With the help of two freeware programs and the freely available OCAD 6, we can convert raw LiDAR data into OCAD map files showing 25m index contours, 5m contours and 1m 'form-line' contours that seem best used as background maps.

The QuikGrid program (<https://quikgrid.jaleco.com/>) was used to produce contour plots. Another application, SAGA GIS (<https://sourceforge.net/projects/saga-gis/>), was first used to convert the Environment Agency data (in ESRI format) into the xyz text file format (.xyz) needed by QuikGrid.

Other public domain programs are available and may provide similar or better functionality to the versions of QuikGrid and SAGA GIS that I used in 2015. I had problems importing .dxf files of contours into OOM but didn't spend time trying to resolve the issue. More refined and effective versions of these applications may now be available.

Fig 1 below shows the Bratley area of the New Forest represented by 5m and 1m contours. The 5m contours are shown in bold. The image was generated using SAGA GIS and QuikGrid to process Environment Agency data

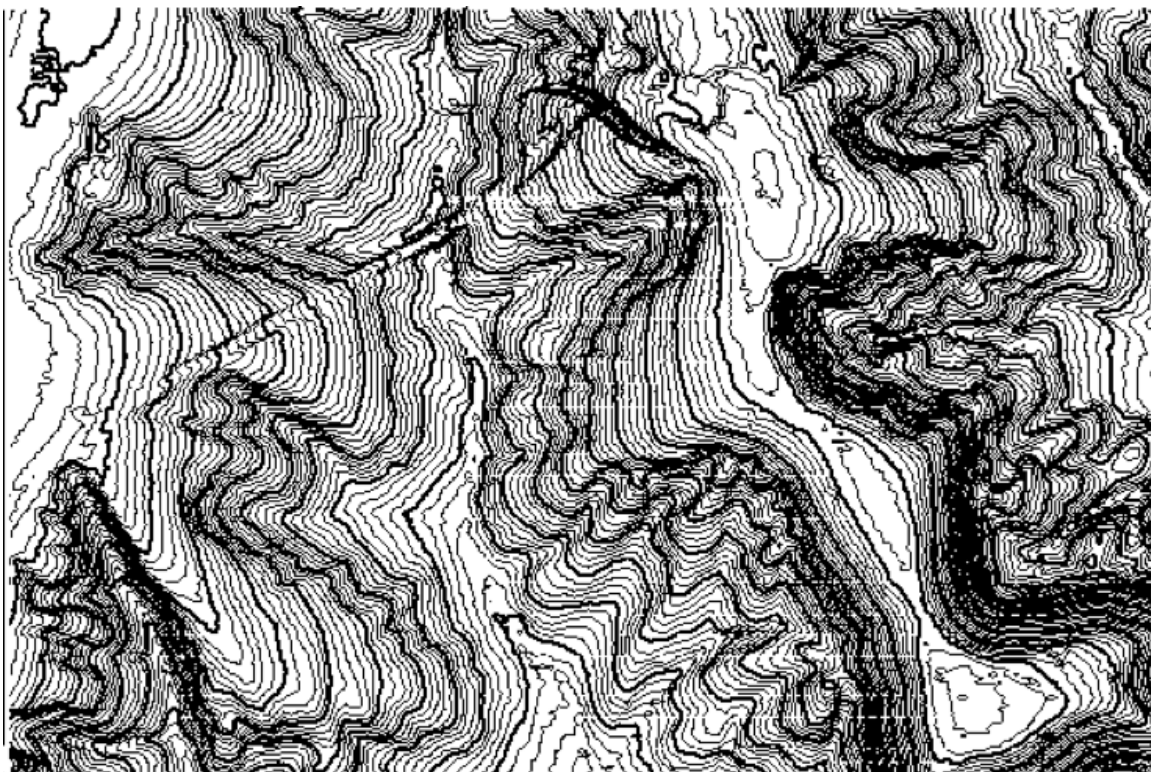


Figure 1: Bratley raw 1m contours

Figure 2 shows the result of importing the data into OCAD 6 using an OCAD facility to assign different symbols to 25m, 5m and 1m contours.

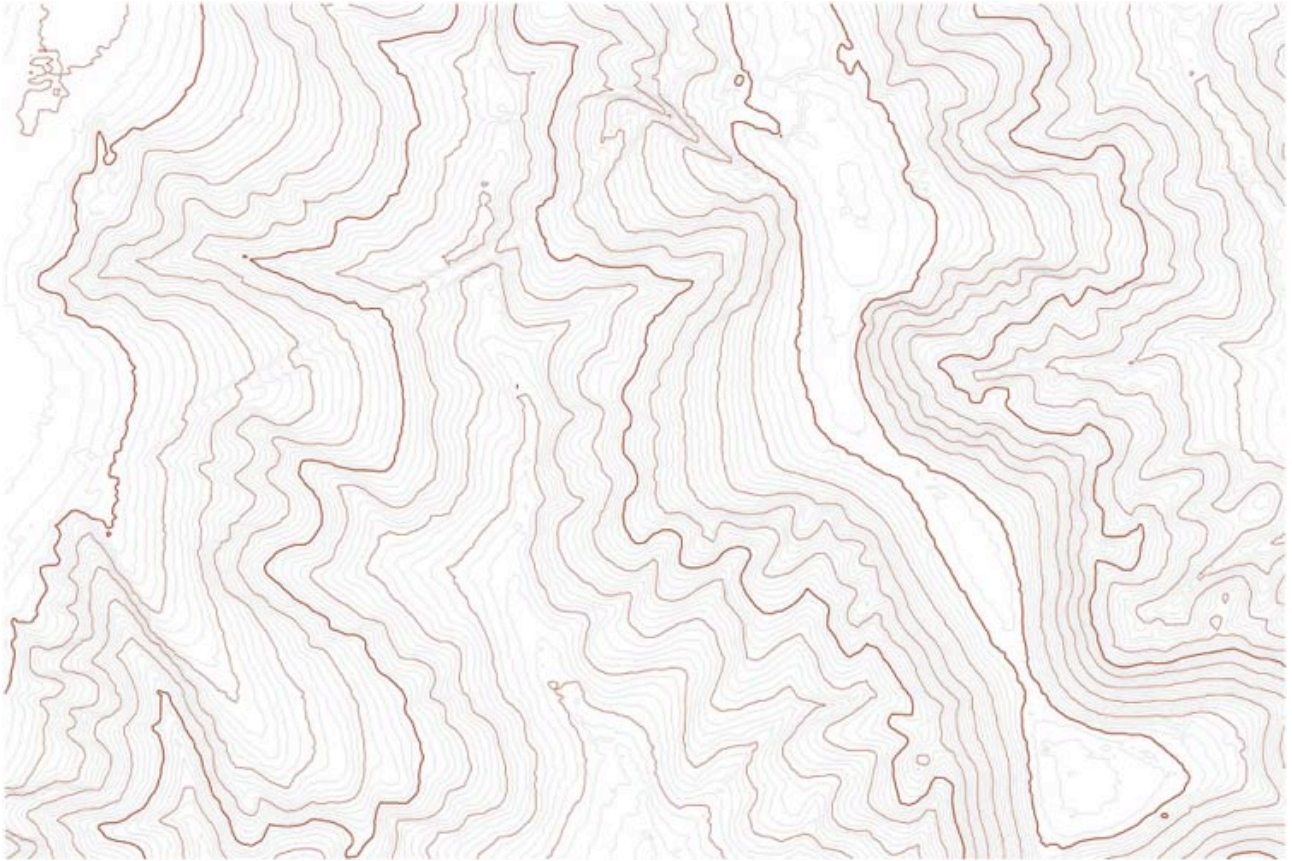


Figure 2: Bratley contour map (25, 5 & 1m)

The program that generated Fig. 1 (QuikGrid) can also create coloured 3D relief maps from the data. Fig. 3 shows the same area with heights in metres (exaggerated 10 times) shown in a range of colours.

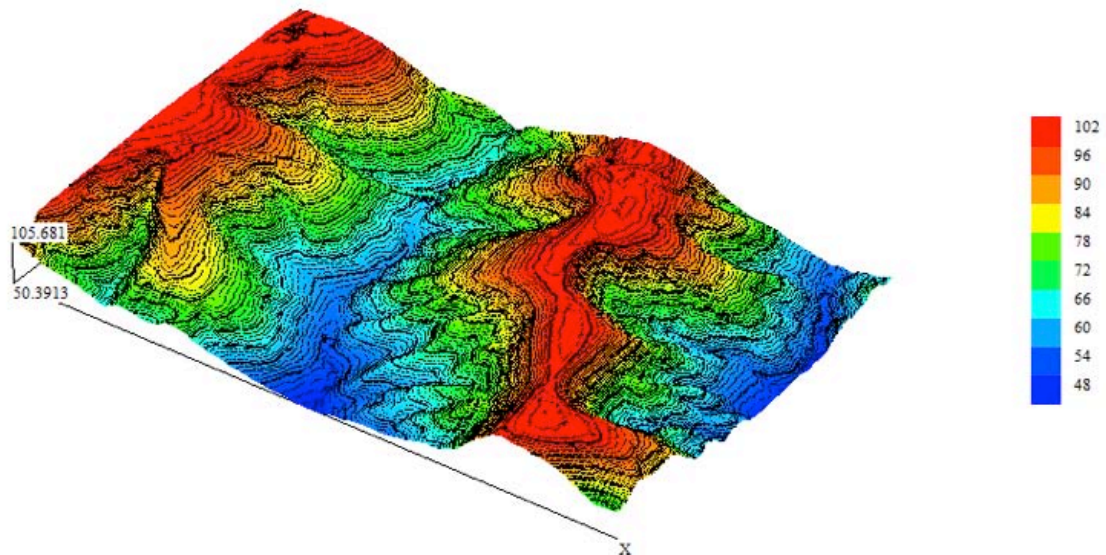


Figure 3: Bratley 3D coloured relief 10% exaggeration of height

I wrote a detailed guide of the whole process for others in my club. Contact me at: mapchair@britishorienteering.org.uk if you would like a copy.

TS

Open Orienteering Mapper



Computer-aided orienteering mapping began in the late 1980s when orienteers began experimenting with commercial software packages such as Adobe Illustrator, Aldus Freehand, Autocad, Coreldraw and Microstation but these were expensive and needed quite a degree of expertise to create an 'O' map. A Swiss orienteer, Hans

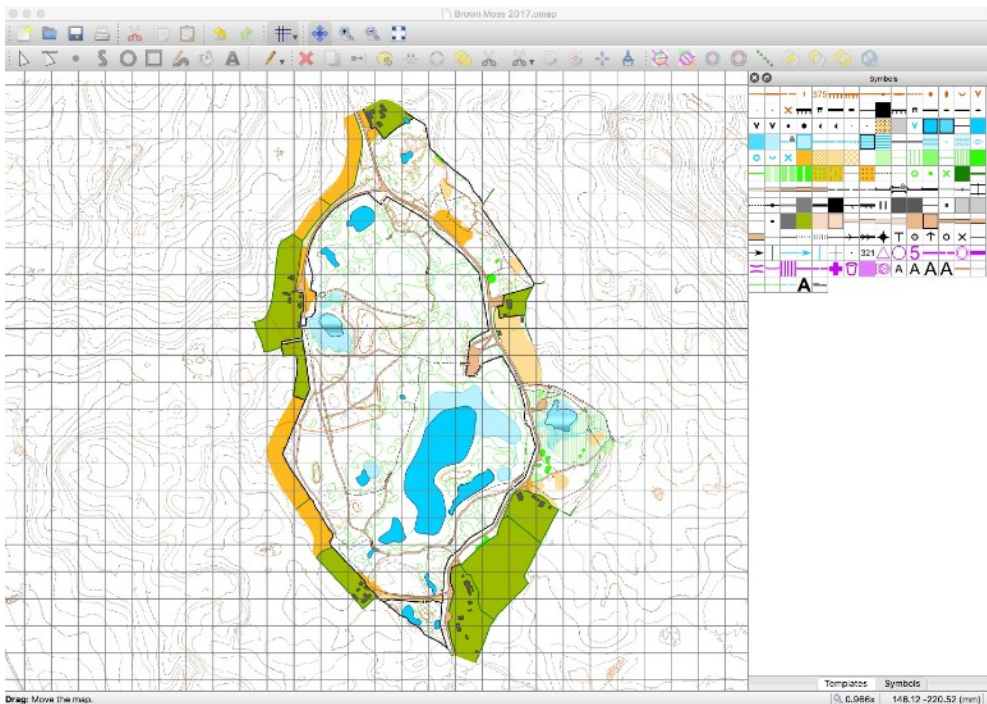
Steinegger, who also happened to be a software engineer decided to create a programme dedicated to orienteering mapping, OCAD. At the time all maps were produced by either pen and ink drawing or scribing and computers were not as ubiquitous as today. It was initially a MS-DOS programme which fitted on a 1.44mb floppy disc - remember those? By version 5 it had become a Windows programme and was readily adopted by mappers. Initially input was by digitising tablet as scanners were very expensive at the time but by version 6 the price of scanners had dropped and digitising tablets were no longer supported. Sadly, Hans died of a heart attack in 2004 at the early age of 56. A group of Swiss orienteers took over the OCAD project and formed a commercial company and gradually the programme developed. The downside was that the programme moved away from its simple roots and into the commercial cartography market and the price rose accordingly such that it has now reached CHF 626 (approximately £440). The licence also restricts the programme to one user so it has become prohibitively expensive for clubs to keep up to date and legal.

The situation was recognised by German programmer, Thomas Shöps, in 2012 and he began the Open Orienteering project with the aim of creating an Open Source software programme that would be a free alternative to OCAD. With the help of Kai Pastor, Peter Curtis and few other volunteers they gradually developed Open Orienteering Mapper as a cross platform programme which works with the Windows, Linux and MacOSX operating systems and will also work on tablets and mobile phones running the Android operating system. The latest version, 0.7.0 is a very capable programme and, though lacking some of the features of OCAD actually performs some tasks better.

I am drawing a small map using OOM on my Apple iMac and am very impressed by the fact that I can also open the file on my Windows XP laptop with no translation problems at all and, I believe, there are no problems opening the file on an Android smartphone or tablet. Sadly, there are no iPad, iPhone versions due to licensing problems with the Apple ecosystem.

I hope to have an in-depth report on OOM in a future issue of the newsletter but features which are particularly impressive are a single drawing tool (path) which allows straight lines and bézier curves to be drawn as a single entity. Navigation, too, is impressive whilst using a 3 button mouse which allows you to zoom in and out and move around the window using the scroll button. However, one of the best tools is the Fill tool which allows you to fill any enclosed area using a single mouse click rather than having to follow existing lines using the Ctrl key as you have to in OCAD.

Because the programme is capable and free it is a good way to introduce cartography to new mappers without incurring great expense. Another advantage is that the programme can open and save OCAD files as well as its own file format. There can be problems with the translation of some of the symbols but these are always explained in a dialogue box when opening the OCAD file and can be dealt with without too many problems.



OOM on an Apple Macintosh

Open Orienteering Mapper for Android

If you have a Smartphone which uses the Android Operating System (version 2.3 or higher) then you might like to try this Open Source software. The programme focuses on mobile surveying using live GPS position display and freehand drawing.

Features include:

GPS

- Live GPS display with position marker
- Point object placement
- Temporary markers which can be recorded

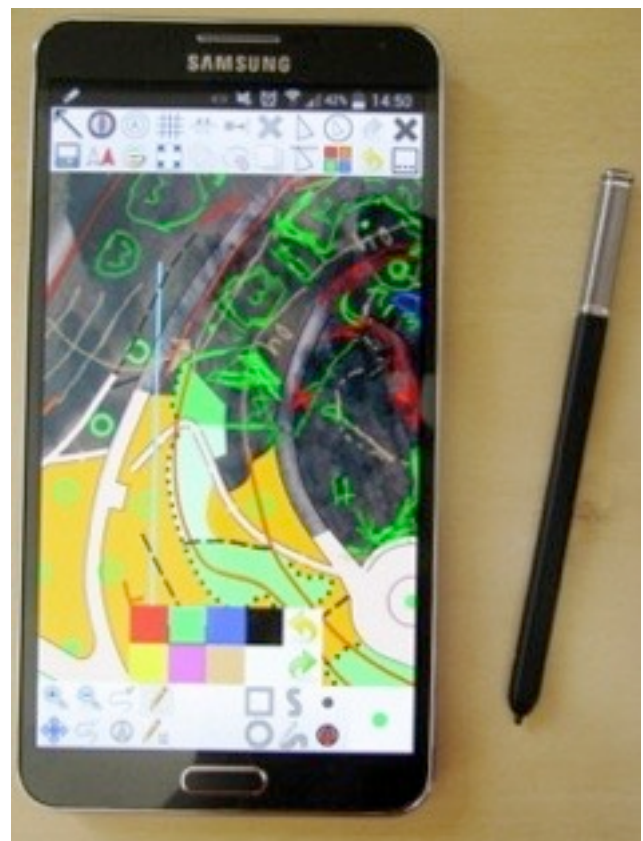
Compass (if supported by device)

- North direction display
- Automatic North alignment

Other

- Touch cursor for precise finger input
- Improved freehand image drawing with Undo and Redo
- Freehand line and Area drawing tool
- Auto Save

<http://oorienteering.sourceforge.net>



OOM on an Android Smartphone

Finnish Success with Young Mappers

Through a targeted project, Finland has succeeded in getting young people interested in mapping. One of them is 19-year old Topi Syrjäläinen, whose map will be used for the Finnish Sprint Championships 2017.



Maps are the most essential part of orienteering, and to secure the next generation of mappers, the Finnish Orienteering Federation (FOF) is running a project to motivate more young people to take up mapping.

FOF receives annually about €200,000 from the Finnish Ministry of Culture and Education for map making. A part of the money is used as support for young mappers. FOF pay a sum of €150 per map to mappers below the age of 20.

19-year old Topi Syrjäläinen is one of those who have taken advantage of the project. He has made 10 official maps and more just for fun:

- I think the map project is a great way to encourage young people to try mapping. For me, mapping is a good way to combine both hobby and work. It is a fun challenge trying to make a good map that is both accurate and legible. The best part is when you see others running on your map, Topi Syrjäläinen says.

Topi Syrjäläinen thought his hometown was full of interesting unmapped orienteering areas so, together with his brother, he took up the task:

- I made my first real Sprint orienteering map when I was 14 years old. There were so many good places in my hometown, Mikkeli, without an orienteering map, so together with my bigger brother we decided to start mapping some areas. Before that, I had done some small maps, for instance one from our yard drawn with coloured pencils, he says.



An Age Span from 10 to 20

In order to get the support, the working time must be 'several working days', so a short updating of an old map is not enough. In almost every case, the young mapper does both the fieldwork and the OCAD drawing of the map, which also is the case for Topi Syrjäläinen.

The payment of €150 can be compared to the level of wages that a young teenager can earn in their jobs during a Summer holiday. A normal salary for them is about €8-11/hour in Finland. It is not always easy to find an ordinary Summer job for teenagers so mapping is a very good alternative for young active orienteers - both as a job but also for training. The project started in 2007 and has attracted both girls and boys in an age span from 10 to 20-years old. The project has grown to a stable level with around 50 new maps a year:

Year	Clubs involved	Young mappers	Maps produced
2007	4	4	5
2008	17	28	34
2009	13	20	21
2010	11	22	27
2011	27	48	96
2012	25	44	61
2013	18	25	40
2014	21	33	46
2015	24	34	52
2016	19	20	54
Total			436

The map that a young mapper makes can be an Orienteering map, a Sprint map, a MTBO map, a SkiO map or a map that covers, for instance, a schoolyard at a scale of 1:1000-1:2500. A schoolyard is a safe terrain for learning both orienteering and map making. Out of the maps produced by young mappers, approximately 40% are Schoolyard maps, 40% Sprint maps and 20% are Orienteering maps.

Topi Syrjäläinen has made several Sprint maps, one of which has even been approved for the Finnish Sprint Championships:

- My maps have been used for both training and competitions. There have been Regional Sprint Championships and pre-races for National Sprint Championships on some of them. This year, one of my maps will be used for the National Sprint Championships, so that is really a big thing for me, he says.



It can be a bit overwhelming to begin mapping, so if the club wants to be a part of the project, they have to provide a mentor for the young mapper. Topi Syrjäläinen liked to explore mapping by himself and the map responsible in his club, Helsingin Suunnistajat, is more of a partner who suggests good areas to be mapped:

- I have learned to make maps from my own experience as an orienteer and from reading all kind of symbol specifications and guides from the IOF. For newcomers in mapping it might be good if you could get some help on how to use OCAD. But for me, it was just about trying different things in OCAD and learning by doing, Topi Syrjäläinen says.

It can be difficult to engage new people in mapping, but Topi Syrjäläinen thinks the clubs could be a bit more outreaching:

- I think many do not know how to map and do not bother to learn, mostly because many places already have lots of good maps. Maybe clubs could do more to instruct new mappers. Instead of hiring other people for the mapping projects, they could ask if someone in their own club is interested in doing the job, he says.

The IOF will continue to encourage and support young mappers. Even though auto-generated maps get better and better they will probably never replace a human being, and the project will ensure that there will be good mappers in the future too.

(This article first appeared on the IOF website)

Digital vs Offset Litho Printing

Since I've been in post, I have had several requests from event officials asking if they can waive the rule for Offset Litho printing of maps for Level A events. Taking advice from members of Map Group and, in a number of cases, looking at proof copies, we have approved these requests. That suggests to me that the time has come to question the requirement for Map Group to get involved where the proposal is to use a printer who has demonstrated that they can digitally print 'Offset-Litho quality' maps.

I welcome a considered debate on this topic. The quality of digital printing has improved considerably over the last few years and I sense that only the most detailed maps warrant the additional cost and effort of printing by Offset Litho. I'm also of the opinion that the criterion should be the quality of the printed map, rather than the method of production. If a printed map is fit-for-purpose, does it matter how it was produced?

The quality of Offset-Litho printed maps was significantly better than early maps printed digitally. However, the capabilities of digital printers continue to advance to the point where it is now difficult for competitors to differentiate between maps produced by the two methods under competition conditions.

Quality tends to be a subjective criterion. Many might argue that a reasonable quality Digital map is more readable and fit-for-purpose than an Offset-Litho map with the colours slightly offset.

Printing maps with additional colours, e.g. for British Orienteering or sponsors' logos, is easily accommodated in digital printing but may need more plates (at a higher cost) when printing Offset-Litho.

With Offset-Litho there can be a risk of mis-aligned plates and smudging if the ink doesn't dry quickly enough. This means more inspection is required, which increases wastage, cost and the time and resource needed to check quality.

There is usually an economy of scale with Offset-Litho that favours large print runs as the process entails a relatively high set-up cost compared to Digital. Conversely, short print runs are more economical when printed digitally.

Digital printing uses heat to seal ink onto the base material. This may reduce the options of printing on heat sensitive material. Offset-Litho is less sensitive and more flexible in this respect.

Litho, especially when using pantone inks, will give a more accurate match to a standard colour than is possible with digital printing, which uses four colours to simulate colours. However, many competitors won't worry about how precisely their map matches standard colours provided the map looks OK and they are able to clearly differentiate the symbols used on the map.

Digital proofs will provide an exact example of the finished produce. With Litho, separate set-ups (at added cost) are required to print a proof followed by the production run.

Many of the factors described above conspire to require greater lead times when printing by Offset-Litho. In turn, this creates greater challenges if late changes are required.

I sense we are at a point where the historic objections to using digital printing for top quality events are now outweighed by the lower cost, lower lead times and flexibility afforded by digital printing, especially for events such as Relays where print runs of 'over-printed' maps are very small and for Urban events where late map corrections may often be required.

What is your experience with the two options? Are we in a position to allow event officials to make the decision, provided they are using printers approved for the process they choose? **TS**

The Holy Grail?

With LiDAR data now being freely available, a number of orienteers have looked at ways of automatically creating maps using the wealth of detail contained in the files. Until recently, the data that was available from the Environment Agency was in the form of 'first pass' DSM (Digital Surface Model) and 'final pass' DTM (Digital Terrain Model) and, as such, was fine for creating contours and hill-shading but not so good for other detail. The Environment Agency has now released the raw .LAS files (known on their website as 'Point Cloud') which means that the data can now be used to automatically generate maps, though it should be said that field checking is still required.

Jarkko Ryyppö from Finland, who is the author of Routegadget, has developed a programme called Karttapullautin which takes the raw data and processes it to make a map. To download the programme go to: <http://www.routegadget.net/karttapullautin/> Unfortunately, I've only got an old PC running Windows XP and I haven't managed to get it to work. To get an idea of what this programme can achieve it is worth taking a look at the MapAnt website where Jarkko and two other Finns have automatically created an 'orienteering map' of the whole of Finland using Karttapullautin: <http://www.mapant.fi/about.php> I'm sure you will agree that the results are very impressive and quite fascinating. Finland does not have full LiDAR cover just like the UK and there are gaps in the MapAnt. There is a guide to using the programme written by the Norwegians here:

<https://dl.dropboxusercontent.com/u/5544745/pullautin/index.html>

Another orienteering mapper who has been working on manipulating LiDAR data is Terje Mathisen from Norway and his method can be found here:

http://tmsw.no/mapping/basemap_generation.html

Of course, these are not complete orienteering maps but extremely good base maps. Care must be taken not to blindly accept the detail without field checking. The vegetation, in particular, can be over detailed and will need generalising to make it sensible for the orienteer at running speed. There has been a tendency in recent years, with the advent of readily available geo-referenced aerial photos and satellite imagery, to map extremely small patches of vegetation and 'significant'



trees which results in over detailed maps which obscure the really important detail, the contours. Similarly, caution is also needed with the contours generated from the LiDAR data. We must avoid contours with an excess of meaningless minute squiggles and we must also avoid the excessive use of form lines. **RP**

Automatically generated map from Sweden

What does it take to win a Mapping Award?

One of the main objectives of the British Orienteering Mapping Awards is to encourage high quality mapping for our events. I thought it might be useful to summarise some of the topics picked up by judges during their evaluation of maps for the last two years.

- ❑ Adhere to the Mapping Specification!
- ❑ Generalise to aid clarity.
- ❑ Avoid mapping excessive detail that doesn't aid navigation but clutters the map, making interpretation of the terrain more difficult.
- ❑ Provide a full legend where possible.
- ❑ Ensure the meaning of special symbols is defined on the map.
- ❑ Avoid obscuring useful information with North lines.
- ❑ Use standard symbols, appropriate for the scale of map.
- ❑ Use symbols from one standard only (ISOM or ISSOM). Ideally specify the standard used on the map.
- ❑ Adhere to minimum sizes for area symbols.
- ❑ Include slope lines when appropriate (few water features).
- ❑ Use the trace facility to align bounding lines, e.g. Vegetation Boundary symbols with the associated area symbol.
- ❑ Avoid drawing symbols of the same colour too close together, e.g. fences to paths, knolls to contours.
- ❑ Centralise tags in the middle of dashed lines.
- ❑ Use appropriate nodes on lines to differentiate indistinct from distinct junctions.
- ❑ Use clear form lines where it helps interpret slopes.
- ❑ Patterned area symbols should be aligned with Magnetic North
- ❑ Include the date when setting Magnetic North.
- ❑ Place arrows on the end of all Magnetic North lines (where possible).
- ❑ Simplify, e.g. by only using one symbol for out of bounds areas where appropriate.
- ❑ Critically assess the added value of mapping small features e.g. two-dot gullies and two-line marshes or vegetation screens.
- ❑ Avoid drawing symbols too close together so that they are hard for the competitor to differentiate.

Lastly, the value of 'white-space' (areas with no detail) on the map may be undervalued. Apart from improving the aesthetics of a map, white-space is said to increase legibility, help the reader focus on the important detail and aid comprehension.

TS

Mapping Awards 2017

Chichester Trophy (Best map by an amateur)

Ben Mitchell (SBOC)

Sugar Loaf

Silva Trophy (Best map by a professional)

Dave Peel (Peel Land Surveys)

Pencuik Ladywood

Walsh Trophy (Best Urban or Sprint map to ISSOM standards)

Dave Peel (Peel Land Surveys)

Pencuik Ladywood

Bonington Trophy (Best Contribution to mapping)

Chris Johnson (BOK)

The judges were:

Steve Barrett (Winner of the 2015 Silva Trophy)

Colin Hicks (Highly Commended for the Walsh Trophy 2014)

Tony Thornley (Winner of the 2016 Chichester Trophy)

News in Brief

ISOM 2017

Bruce Bryant has done some work amending small errors in the OCAD ISOM 2017 symbol sets and has added the BOF logo colours. We aim to make these available on the British Orienteering website shortly.

Map Advisory Group are currently considering how best to implement the transition to the new ISOM 2017.

British Orienteering Website Update

The Mapping page on the British Orienteering website could probably benefit from a review and updates to some of the resources that it links to: (If you would be interested in helping with this task please contact me at: mapchair@britishorienteering.org.uk)

Requests for help

I would like to increase the pool of Mapping Advisors and those willing to act as judges for the annual Mapping Awards. If you would like to be involved in these or any other Map Group activities please contact me at: mapchair@britishorienteering.org.uk