BRITISH ORIENTEERING
Map Group

Advice to Clubs on the Procurement of Orienteering Maps

v.1.0 November 2001

1 Introduction

1.1 The Mapping Process
1.2 Computer Aided Mapping
1.3 Base Maps
1.4 Survey
1.5 Cartography
1.6 Printing
1.7 Deadlines
1.8 Copyright
1.9 Ordnance Survey Copyright
1.10 General

2 Information for Club Mappers

2.1 Definitions
2.2 British Orienteering Map Registration Scheme
2.3 Choice of Area to Map, Land Use Permissions and Access to the Area
2.4 Map Adviser Scheme
2.5 Insurance
2.6 Timetable
2.7 Using Other People's Work
2.8 Overprinting Of Courses
2.9 Penalties

3 Appendix A: Initial Specification and Invitation to Quote

3.1 Requirements
3.2 Quotations
3.3 Programme
3.4 Details of the Area
3.5 References

4 Appendix B: Draft Mapping Services Agreement

4.1 Preparations
4.2 Survey
4.3 Cartography
4.4 Copyright and Ownership of Materials
4.5 Payments
4.6 Penalties

1 Introduction

Mapping can be a major commitment to a Club, and professional services for mapping often involve quite large sums of money. Maps produced by club mappers usually involve smaller amounts of money but can still tie up large amounts of Club resources, especially manpower. This document has been produced by British Orienteering Map Group to help Club officials when dealing with mappers in an attempt to avoid potential confusion and difficulties that may arise, particularly with survey and cartography.

Most of this document is intended for the professionally produced map but club mappers should read (and understand) the whole process so that they know what commitments they are making (for themselves and for their Club).

The two main requirements for any mapping project are an unambiguous specification giving precise details of the work to be undertaken (including the time scale and the costs involved) and an Agreement laying down the responsibilities and liabilities of the parties involved. These need to cover key areas such as the area to be mapped, access, timetables, survey and cartographic standards, what is to be produced, and who owns what at the end of the work.

It is intended that the attached draft Agreements should be used as an example which can be tailored to suit individual requirements. In these Agreements, information *in italics* indicates where substitutions should be made. They are most likely to be used when complete map production, or at least the survey and cartography, is undertaken professionally - services usually relatively high in cost and long in duration. Relatively straightforward services such as photogrammetry or printing do not usually require such detailed treatment.

1.1 The Mapping Process

In the past many Clubs have simply ordered a quantity of printed maps without getting themselves too involved in the actual mapping process. This mapping process covers the whole task from inception to final printed map. This has resulted in problems when Club Officials have had different expectations from the Mapper of what is expected from the process, or what is achievable. Club Officials need to understand better the mapping process so that they can be provided with the product that they need. The following paragraphs highlight those stages in the process where confusion and/or problems can arise.

1.2 Computer Aided Mapping

The last few years have seen a considerable change in the process for producing orienteering maps and this needs to be considered before starting the mapping project. OCAD has become the (unofficial) standard, but there are other software packages available.

The main points to be addressed are:

Base map - is there an existing computer file for the area; who owns the copyright of that file; and is it available for use on this new project?

Course planning and overprinting - will the Planner be using software for the course planning and is this compatible with the mapping software? Who will be preparing the overprints for the printer (Mapper or Planner) and is the software compatible?

Printing - what sort of computer files does the printer require?

1.3 Base Maps

There are three basic options: existing orienteering maps (paper or computer files), material from other mapping agencies (e.g. Ordnance Survey), or specially prepared material (e.g. photogrammetric base maps).

Whichever material is used it is essential to check with the copyright holder for permission prior to use and agree a price where necessary to cover the copyright fee. The Federation has a national agreement with the Ordnance Survey which covers the use of their base maps. A fee is payable based on the number of maps printed and that agreement requires a copyright statement to be included on the map.

The surveyor will often provide the base map and plot himself. If someone else is providing the plot the surveyor will need to be consulted about it as he could reject the plot if it is not to his satisfaction. When using photogrammetry check with the suppliers about the availability of aerial photos - many firms will do a search for free. The plot will be the property of the Club, but only after it has been paid for. The company providing the plot will normally expect to be paid for it after delivery (of the plot, not the final map).

1.4 Survey

- **Access**
  As a part of the negotiations for the event it is important to establish with the landowner access rights to allow the survey to take place. This should cover not only the length of time necessary for the survey but also the season when it may take place. Landowners often impose restrictions on access to protect nesting birds, lambing, shooting etc.

- **Time scale**
  Surveying is a slow process and can take between 16 and 60 hours per square kilometre depending on the difficulty of the terrain and the experience of the surveyor. There may need to be some time allowed for revisiting the area after checking by the Planner, Mapping Adviser, and/or Controller.

- **Expenses**
  Some quotations may include estimates for out-of-pocket expenses e.g. travel and accommodation. When paying expenses you are entitled to ask for copies of all the relevant receipts.

- **References**
  It is important to obtain samples of previous work and references. Survey is the most time consuming and therefore the most expensive service. It is also very difficult to put right when it is not up to standard.

1.5 Cartography

- **Time scale**
  This could be of the order of 50 - 100% of the survey time, with a further eight hours work for the map layout.

- **Specifications**
  By default these will be the current International Specifications (ISOM 2000) and British Orienteering variations, which cover, amongst other things, the map scale and symbol dimensions.

- **Map size**
  It is important to consider at an early stage the size of the final map, and obtain an agreement with the cartographer that the map and all other information will fit within these dimensions. Since printers work with standard paper sizes it can be cost effective to ‘rearrange’ the layout, or trim the mapped area, so that you are not paying for blank paper on the next larger paper size.

- **Proof copies**
  Be clear on what you mean by a proof map as not all proofing systems are equivalent. A cheap dot matrix copy may be good enough for checking the map layout and content but not clear enough for accurate checking or planning. Most modern ink jet printers will produce proof maps of sufficient quality. If the map is being computer drawn it may be convenient to provide the proof map as a computer file (e.g. a PostScript file) for the officials to print themselves. The Planner may require the map in a form suitable for the planning software (e.g. a bitmap).

1.6 Printing

- **Single maps**
  You will be required to supply information on the type of artwork to be supplied (e.g. Postscript separations for traditional offset printing, or a colour postscript file for digital printing); the paper quality (weight); the dimensions of the trimmed map (usually in millimetres); and the number of copies required.

- **Multiple Maps**

  For multiple maps, maps at two scales, and work involving overprinting the costs can vary enormously. In these cases it is advisable to discuss the options with the Mapper, Planners and/or printers in order to calculate the best option.

- **Digital Printing**

  This printing process will usually need colour PostScript files. You will need to discuss with the mapper and/or printer how the files are to be transferred (e.g. by email) etc. You may need several proof prints in order to fine tune the printed colours. Some printers may prefer to receive the OCAD files in order to process their print job.

At present the VAT for printed maps is zero. However, if portions of the work are undertaken separately (e.g. survey and cartography) by VAT registered companies you would be required to pay VAT on that work at the standard rate.

1.7 Deadlines

The draft Agreement sets out the financial penalties for the Professional Mapper when the Mapper fails to meet the required deadlines. It could easily be inferred from this that the other officials involved are not responsible for meeting those deadlines. The Planner and Controller, in particular, must be made aware that they themselves must keep to the deadlines if they want the final map to meet their requirements.

Everyone involved in the mapping project must be clearly aware that when there is a fixed date for the event then the map must be produced by a specific date.

1.8 Copyright

The law relating to copyright is straightforward although many clubs and individuals misunderstand their rights over ‘their map’. The creator of any artistic work (i.e. the mapper) holds the copyright to that work regardless of whether it has been paid for. The ownership of the final product i.e. the printed map, belongs to whomever commissioned and/or paid for it. The Club therefore has the rights over the printed map. They also have the rights over the reproduction of that map and the Club is therefore entitled to possession of the final films and/or final (electronic) print files. Copyright does not extend to cover the ownership of the materials used in the production of the maps and, in particular, it does not cover ownership of electronic data files and/or software where the map is computer drawn.

The name of the holder of the copyright needs to appear on the printed map and this should be specified in the Agreement. Clubs may wish to specify in the contract that the ownership of the electronic data files (or other materials) does become the property of the Club. This would then allow the Club to update the map at some future stage although the mapper would be entitled to some artistic safeguards in the use of his work. Some mappers, in particular, may object to their work being corrected by others whose work is of a lower standard.

Many companies will hold materials for you at no charge. This is to be recommended as materials transferred back to Clubs and individuals have often become lost or damaged. If you do wish to obtain materials for storage you should ask them to provide a duplicate set of the final films used for printing.

1.9 Ordnance Survey Copyright

Note that the Ordnance Survey has copyright on all material produced by them, so any map based, however indirectly, on OS material will be in breach of copyright unless it is licensed by them, and the appropriate royalty is paid. This is likely to apply to most orienteering maps, including orienteering maps based on previous orienteering maps.

Orienteering maps can be licensed under British Orienteering's agreement with the OS by registering the map with British Orienteering and completing the form OS1. Royalties, payable to British Orienteering, are based on the number of copies of the map printed in any one year. The cost is considerable cheaper, and the procedure considerably simpler, than obtaining a separate licence directly from the OS.

1.10 General

Where possible try to obtain quotations rather than estimates. Quotations are agreed prices for the work which can only be altered following a change in the specifications. If you do change the specifications of the work, make sure that you obtain a written quote for how much the extra work will cost. Most disputes between client and Contractor are over the charges for extra unspecified work. This is especially true for printing and overprinting where apparently small changes in the specifications (such as to map dimensions) may incur large extra costs.

The invitation to quote should be accompanied by a covering letter giving relevant information about the area and/or event. It should not be assumed that the surveyor knows the area and can therefore make a valid judgement on the time needed for the survey. A site visit might be recommended. Where preferential treatment is to be given e.g. to a club cartographer then make this clear in the covering letter. Professionals are often very willing to help club members but can be resentful about providing detailed quotations that the Club has no intention of taking up.

2 Information for Club Mappers

2.1 Definitions

This document was originally written to cover the production of professional maps where there can be a considerable financial outlay for the Club. In that situation there needs to be an enforceable Agreement to protect both parties from breaches of that Agreement.

Where the survey and/or cartography are being produced at little, or no, financial cost to the Club e.g. by a club mapper then there is probably no need for a formal Agreement. However, all the parties still need to understand what commitments they are making, and should therefore read and understand the whole of this document.

There are some points that need to be made for club mappers which do not usually concern the professional mappers.

2.2 British Orienteering Map Registration Scheme

British Orienteering operates a Map Registration scheme. It has a number of functions: it collects mapping statistics in support of sports council funding; it is used to monitor quality through the map assessment scheme; it licences the use of OS-copyright material through British Orienteering's agreement with the OS; and it provides insurance cover under the British Orienteering insurance policy.

Maps are registered using the form MR1 and British Orienteering issues the subsequent forms automatically. Map registration is not compulsory, but maps not registered with British Orienteering are not covered by the OS licence agreement, and the mapper is not protected by British Orienteering insurance. Any orienteering map produced by a British Orienteering member may be registered with British Orienteering, including e.g. school maps and permanent course maps.

2.3 Choice of Area to Map, Land Use Permissions and Access to the Area

This will normally be done by the Club committee. There may be a mapping officer or land access officer who will carry out all the necessary administrative tasks.

Since all land in the United Kingdom is owned by someone you will need to have permission to enter the area. This will probably be obtained by the same officer who will let you know the specific restrictions for that area.

2.4 Map Adviser Scheme

British Orienteering operates a Map Adviser scheme to help all mappers. The formal details are set out in the Rules and Guidelines although they do tend to concentrate more on the larger events. However, it is recommended that all maps have a Map Adviser. The Map Adviser is an experienced mapper who is there to help the mapper produce the perfect map.

2.5 Insurance

The British Orienteering insurance policy is for liability insurance, i.e. it provides cover against claims for damages, negligence, etc. Such claims are relatively rare, but can be very expensive. All mappers are advised to have this protection, and landowners are likely to require it. The British Orienteering policy does not cover accidents, personal injuries or personal property unless these involve a claim for damages, negligence or the like. If you want to insure your property against loss, theft or damage (your household insurance may provide this cover) or insure yourself against accident or medical costs, you must make your own arrangements.

British Orienteering insurance applies to all maps registered with British Orienteering, including school maps and permanent course maps, provided the mapper is not a professional or acting in business capacity. For our purposes a professional mapper is anyone earning more than £5000 from mapping activities in the year in question. Professional mappers will need their own liability insurance. Some maps may be covered by other policies, e.g. school or local authority insurance. But it is important to ensure that you are covered: if in doubt, register the map with British Orienteering.

Cover is automatic for all maps registered with British Orienteering, and covers all mapping activities and any liability that may arise for the mapper from subsequent use of the map. To provide full protection it is important to register the map before beginning the survey. Preliminary investigation, e.g. to decide whether an area is worth mapping, is covered, but cover after surveying begins requires registration. Each event using the map needs to be registered separately under British Orienteering's event registration scheme. This is not the mapper's responsibility.

2.6 Timetable

Surveying is a slow process and can take up to 60 hours per square kilometre depending on the difficulty of the terrain and the experience of the surveyor. You will need to allow some time for revisiting the area after checking by the Planner, Mapping Adviser, and/or Controller.

The commonest problem with mapping projects is the failure to keep to a timetable. If the club mapper is in full time employment, or has other commitments, then the surveying can be spread out over a very long period. A survey of four square kilometres at forty hours per square kilometre could easily take sixteen months (at ten free hours per month). You need to keep your Club informed of progress - it may be better to postpone the event for twelve months rather than have to cancel it at the last minute.

2.7 Using Other People's Work

It is becoming fairly common these days, especially with OCAD maps, for the map files to be passed from one mapper to another. It is very important to be honest in the use of those files e.g. if all you have done is update the cartography then state that. Do not claim to have done work that was done by someone else. Acknowledgements are always appreciated: omissions are not.

You also need to be very careful about maintaining the quality standards and integrity of an existing map when updating a map file. The original surveyor and/or mapper may not share your views on correcting his work and may consider your efforts to be artistic vandalism.

2.8 Overprinting Of Courses

There are now several planning packages available which allow the planner to plan courses using electronic map data files. This could be the original OCAD files or derived files such as bitmaps. If the mapper has retained the ownership and copyright of those computer files it would not be unreasonable for the mapper to lend the OCAD map files to the Club to be used for planning purposes or for overprinting maps (e.g. via PICOVER). There would have to be a clear understanding by the Club that the files belong to the mapper and would have to be deleted after the event.

2.9 Penalties

If the club mapper is working at no cost to the Club then the Club cannot impose any financial penalties on the mapper. The club mapper, however, should be clearly aware that he is committing the Club to putting on an event and if he fails to complete the map in time he could cause financial loss to the Club. If the map is behind schedule then discuss the matter with the Club and the other event officials so that realistic choices can be made about the proposed event

3 Appendix A: Initial Specification and Invitation to Quote

3.1 Requirements

The *photogrammetry, survey, cartography and printing* of an orienteering map of *Thick Green Forest* for an event to be held on .....……

3.2 Quotations

Quotations are invited for all or any part of the following:

a) Production of a photogrammetric base map of the area outlined in *red on* the enclosed map at *1:7500* scale with 5 metre contour interval inclusive of the costs of aerial photography.
b) A survey map of the entire area outlined in *yellow* on the enclosed map to be based on a *photogrammetric plot, OS material, existing map, or existing OCAD map file.* Any out of pocket expenses (e.g. travel, accommodation) should be shown separately.
c) Drawing the entire map from the above survey draft inclusive of all materials.
d) Production of a colour proof.
e) Production of final films and/or final print files *at both 1:15000 and 1:10000 scale.*
f) Printing *2000* copies of the map at *1:15,000* in the IOF standard colours.
g) Cost per extra *1000* copies.
h) Overprinting approximately *20* courses.
i) Transfer of ownership of the *final drawings/final OCAD map files*.

Quotations should be sent to .....……. to arrive by .....……

3.3 Programme

It is envisaged that the following time scale will apply:

Agreement signed on
.....……...

Photogrammetric base map completed by
.....……...

Survey of the area to be carried out between .....…… and
.....……...

Copy of survey draft to be submitted by
.....…….

Planners, Mapping Advisers, and Controllers comments to be submitted by
.....……

Revision of survey to be completed
by.....……...
Cartography to be completed and colour proof to be submitted by
.....……..……...
Revision of cartography to be completed by
.....……...
Printed maps to be supplied by
.....……

3.4 Details of the Area

The exact boundaries of the area to be plotted and surveyed are shown on the enclosed 1:25,000 map *in red*.
The area measures ..... square kilometres comprising:
..... sq. km. detailed runnable forest and ..... sq. km. rough open land.
..... sq. km. fields (to be plotted but not surveyed in detail).
Areas for which permission has not been obtained have been outlined in *green.*
Further information on the area can be obtained from
.....……..……..

3.5 References

It is essential that you include samples of your recent work and any references along with your quotation.

4 Appendix B: Draft Mapping Services Agreement

This Agreement is between *Mercator Orienteering Club* (hereinafter called "the Employer") and *Acme Mapmakers Limited* (hereinafter called "the Mapper") and is for the *photogrammetry/survey/cartography/printing of Thick Green Forest* (hereinafter referred to as "the Works") for an event on *(date)* as detailed in the initial specification. It is based on the *mapping estimate/quotation* supplied on *(date).* The Employers representative will be the Mapping Coordinator (MC).

4.1 Preparations

a) The Mapper will be responsible for the preparation of a suitable base map from *materials supplied/photogrammetric base map supplied/will be responsible for providing the photogrammetric base map.*

b) The base map shall be at a scale of *1:7500* with *5* metre contour interval.

c) A copy of this base material shall be sent to the MC by .....……...

d) Upon payment for the base map the base map shall then become the property of the Employer.

4.2 Survey

a) The Employer will be responsible for arranging permission for the Mapper to enter the area. Prior to the start of survey the Employer will provide a suitable map marked with the names and addresses of the landowners and/or tenants concerned. The Employer will warn the landowners of the dates the Mapper intends to enter the land and, if necessary, arrange a suitable meeting.

b) The Employer will provide the Mapper with a detailed and accurate map showing the extent of the area to be surveyed, any areas to be included on the final map but not surveyed in detail (e.g. built-up areas or fields), and any areas for which permission has been refused.

c) The survey shall be carried out at *1:7500* with *5* metre contour interval.

d) A high quality survey of the area (as delimited in ii) shall be carried out by the Mapper in accordance with the Specifications laid down by the IOF in the booklet 'International Specifications for Orienteering Maps'. Any variations to these specifications must be agreed with the Employer.

e) The survey shall be carried out between .....……. and .....……. Precise dates shall be agreed with the Employer.

f) Verbal and/or written reports of progress shall be sent to the MC at *weekly/monthly* intervals.

g) A copy of the final survey draft shall be sent to the Employer not later than .....……..

h) The survey draft shall be checked by the Employer for accuracy and consistency and any corrections reported to the Mapper by .....…….. The Mapper shall carry out any revision by .....……..

i) Any variation in the scope of Works to be provided by the Mapper shall be undertaken when instruction in writing has been provided by the Employer and after agreement of any change of fee.

j) The Mapper shall not assign any part of the Works to another party without written consent of the Employer.

k) The Mapper shall indemnify the Employer against any claims for damage done as a consequence of his actions.

4.3 Cartography

a) The final map will be produced *as an OCAD map file as agreed* between the Employer and the Mapper.

b) The survey of the area will be carried out at *1:7500* and the Mapper will be responsible for any reductions or enlargements necessary to complete the cartography.

c) All symbol dimensions must be in accordance with the Specifications laid down by the IOF in the booklet 'International Specifications for Orienteering Maps 2000'.

d) The final map will be at a scale of *1:15.000* and is to be drawn to fit on a sheet *297mm x 210 mm (A4). Full title, scale, scale bar, contour interval and legend of all symbols used* should appear on

the map. The Employer also asks that the following credits/logos should appear. The final layout shall be agreed by the MC in consultation with the Mapper prior to final drawing.

e) The Mapper shall provide a full colour proof of the map in the form to be printed on or before .....……..

4.4 Copyright and Ownership of Materials

a) The Copyright holder for the Works shall be *Mercator Orienteering Club*.

b) (Either) The ownership and copyright of any materials used during the production of the Works shall remain with the Mapper.
(Or) On completion of the Works, including payment, ownership and copyright of the *OCAD map files/final drawings* shall become the property of the Employer. This shall include the mapped area but unless the Mapper agrees shall not include the peripheral elements of the map.

4.5 Payments

a) Payments will be made on receipt of a suitable invoice provided that the work has been done to the satisfaction of the Employer.

b) Payments of up to the amount specified in the *Mapping Estimate/quotation* shall be made after the completion of photogrammetry, survey and cartography.

c) Arrangements for stage payments during the survey period (if required) should be made in advance with the Employer. They will be paid only on production of evidence of satisfactory progress.

d) Additional payments over and above those specified in the *Mapping Estimate/quotation* will only be made if:

i) Additional surveying or cartography has been requested in writing by the Employer.

ii) A revised estimate has been provided and accepted.

4.6 Penalties

a) If the mapper fails to produce a survey draft of an acceptable quality by the date specified above then either a reduced payment shall be made or a maximum of one month given to make the necessary improvements at no extra cost to the Employer.

b) If as an avoidable consequence of the Mapper's actions and activities permission to use the area for orienteering is withdrawn all Works will be stopped. The Mapper will be entitled to no further payment and any previous payment shall be refunded.

c) If permission is withdrawn through no fault of the Mapper then payment will be made on a pro-rata basis for the Works already completed, or, if the Mapper can show financial loss, then payment will be made up to the loss suffered (but not exceeding the *quoted/estimated* price).

d) If the Mapper does not produce artwork of an acceptable quality by the date specified above then payment will be withheld until all matters are put right. Any additional costs incurred by the Employer shall be charged to the Mapper.

e) Disputes as to the operation of the Agreement which cannot be resolved between Mapper and Employer shall be referred to binding arbitration by a person acceptable to both parties appointed by the Chairman of the British Orienteering Map Group.

Signatures For *Mercator Orienteering Club*…….. Date……...

For *Acme Mapmakers Limited* …….. Date……...