



Sheetlines

The journal of
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps

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THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps
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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

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Forthcoming visits

Details of the two remaining Charles Close Society events in this season's programme are given below. If you would like to be included on either of these, please contact Gerry Jarvis, Rulow House, Buxton Old Road, Macclesfield, Cheshire, SK11 0AG, (01625) 611594, g0wgi@yahoo.co.uk.

The visit to the Royal Navy Hydrographic Office at Taunton has been postponed until 4 March 2003. More information will be given in the next issue of *Sheetlines*.

Visit to Cheshire County Council, Chester, 4 September 2002

Alan Bowring and his colleagues work at the Cheshire County Council Public Rights of Way Unit at Goldsmith House, Chester, and we shall have an opportunity to see the work undertaken there. We shall meet at 1000 for 1030, and aim to finish by 1600, although it will be possible for anyone travelling a long distance to get away earlier.

In the morning we shall look at the definitive maps of public rights of way for Cheshire, and examine the processes which led to their publication in the 1970s. Then there will be an opportunity to look at how changes are made, and the process of evidence gathering to achieve this, which includes tithe and estate maps; also the powers of councils to create, divert and extinguish public paths.

After a break for lunch they will demonstrate the use of *Arcview* GIS to record and manipulate rights of way and countryside access information, and to produce digitised versions of the definitive map. They will also cover several aspects of the Countryside and Rights of Way Act, its relevance to the earlier maps produced following the National Parks and Access to the Countryside Act 1949, and the forthcoming 'Discovering Lost Ways' project, which is described in Alan Bowring's article later in this issue.

Two and a half inches at Exeter University, 21 September 2002

There are two main themes to the day: in the morning the launch of a new book on 1:25,000 mapping by CCS and in the afternoon a talk by a representative of the Ordnance Survey on the development of the *Outdoor Leisure* and *Explorer* series.

The meeting will start at 1030 for 1100, with talks from Roger Hellyer and Richard Oliver, the two authors of our new book. This will be followed by a book launch session, and a rare opportunity to have your copy signed by both authors.

At 1400, following lunch at the University, a member of Ordnance Survey's Graphic Marketing Team will give a presentation about recent developments to the *Outdoor Leisure* and *Explorer* Series and related business issues.

For those of you planning a day visit, you should be able to get away by 1500, at which time we shall have tea. For those of you in no hurry or who are staying for the weekend, why not bring some of your favourite 1:25,000 maps with you, and we can indulge for an hour or so in our favourite occupation of map browsing.

For those of you staying the weekend, inexpensive accommodation is available at the University. If you prefer hotel accommodation in Exeter, or would prefer a coastal location, Gerry Jarvis has details of accommodation in Exeter, Dawlish and Exmouth.

On the Sunday morning there will be an informal short walk for anyone who wants some exercise before returning. This will probably be along the Exe Estuary, finishing at a pub overlooking the sea.

We do need to book accommodation, refreshments and lunch at the University ahead of the event, so **formal bookings will close on 6 September 2002.**

Midlands Group Meetings

An open discussion session will take place on 12 September; for details see *Sheetlines* 63, but note that Lez Watson's e-mail address has now changed to lez4lynne@aol.com.

Sheetlines binders and print size

Two questions were raised at the AGM concerning *Sheetlines*. First, as to whether it was possible to purchase additional wires for the binders to accommodate more of the early slim issues. We have now been informed by the manufacturer, Modern Bookbinders Ltd., Pringle Street, Blackburn, Lancashire, BB1 1SA (Tel: 01254 59371), that in response to £1 in postage stamps, they will supply a packet of 12 additional wires. Please specify the size of binder for which they are required, namely *Sheetlines*, portrait A5.

Secondly, the Editor confirmed that although we have so far had no requests for this, we should be happy to issue *Sheetlines* in larger print, or on a CD-ROM, to any members who have difficulty in reading the usual version. Please contact the Editor.

British Association

In his Chairman's Report to the AGM, Chris Board noted the election of our honorary member, Professor David Rhind, to a Fellowship of the Royal Society. In addition, we learn¹ that David has subsequently been elected to an Honorary Fellowship of the British Association. At the same meeting of the BA, Professor Roger Kain, another distinguished member of the Charles Close Society, was elected Treasurer. The Society extends its congratulations to both.

¹ *The Times*, 6 July 2002.

Visit to the British Geological Survey Keyworth, Nottingham, 7 March 2002

Tim Sanderson

The British Geological Survey (BGS) headquarters are located on the outskirts of a nondescript village called Keyworth just to the south of Nottingham. Founded in 1835, for most of its history the Geological Survey was based at various London sites. In the early 1960s government dispersal policy was eventually to result in the acquisition of Keyworth in 1976, a redundant teacher training college. Named after the then Director, the Kingsley Dunham Centre is a campus of over 20 acres and home to approximately two thirds of the survey's 800 or so staff.

Our visit, involving fourteen members, only allowed a glimpse at some of the many varied activities connected with geoscience, both here and overseas. After an introduction to the BGS under the gaze of past directors' portraits (all male) there was a brief visit to the Palaeo Museum. This houses a collection of a quarter of a million items, the most comprehensive UK fossil collection and a deposit for new 'type' specimens. The majority are cocooned in timber cabinets; a few of the larger and more spectacular items, however, are on open display and used for school visits. An early example of dealer sharp practice was an exhibit acquired over 100 years ago which upon later cleaning revealed some extra fossils glued on.

Next we were shown to the National Geoscience Records Centre; this houses a huge depository of information dating back to the 1790s. A selection of geologists' annotated field maps and notebooks had been displayed, the earliest on Old Series one-inch mapping with a move to six-inch sheets in the early twentieth century. Also shown were a sample of the sixty thousand mine records held. Much of the information at the Centre can be accessed electronically and a demonstration was given of their Internet Geoscience Data Index which is to be found on the BGS website.

There followed a tour of the borehole core warehouse; this houses 120 kilometres of material held in conditions of some security due to the commercially sensitive information some of it contains. Information gathering by this method is not cheap; a deep bore can cost two million pounds. The earliest material is from Portsmouth Dockyard dated 1826 and a colonial collection includes specimens from Darwin's visit to the Galapagos Islands.

The last stop before lunch was to the drawing offices for a demonstration of 1:50,000 map production and developments in digital cartography.

The history of one map was demonstrated, sheet 141, *Loughborough*. The process starts with the geologist's field data on 1:10,000 sheets being scanned with editing to promote small but important outcrops that would otherwise be lost on the smaller published scale. About twenty new sheets are published each year with print runs of 1800 copies. The use of computers has greatly increased output, by hand only four sheets a year could be produced.

The afternoon was spent in the map library; this houses a collection of 200,000 maps and atlases and was started by the first officer of the survey, De la Beche, in the 1840s. A selection of both historical and modern material was on display, starting with sheet 11 of the famous map by William Smith of 1815, the first geological map of England and Wales. The BGS are producing a reproduction of this particularly colourful sheet for sale. Also shown alongside was a copy of Greenough's map that was soon to eclipse Smith's. An early

example of the standardisation of map colouring was to be found in a small leaflet from the 1830s titled Uniform System of Indicoclature (table of letters and colours on maps).

There was ample time to visit the geology shop in the entrance foyer. This offered a very commercial selection of ornaments and knickknacks as well as official publications, there was even an earthquake monitor hidden between the stands though I don't think this was for sale.

This was an excellent visit and the staff at the BGS were particularly welcoming and informative hosts. If you ever visit the site ask to see the glass covered coffee table, beneath is a copper plate of a geological edition of the composite Old Series one-inch map of London and Environs.

*Small is beautiful:
Visit to Alan Godfrey Maps, 13 June 2002
Brian Biddiscombe*

In terms of size Gerry Jarvis had moved to the opposite end of the map-making spectrum. By contrast with the previous visit he had arranged to the Ordnance Survey's Headquarters (*Sheetlines* 63) his latest offering as Visits Organiser was very different in terms of both the technology used and the scale of business activity, but the quality of the product stood full comparison. Around a dozen members met at the Prospect Business Park at Leadgate in County Durham, where member Alan Godfrey was our host in the premises, which his four-person firm has occupied for the past two and a half years. Its move from Gateshead has enhanced the production capacity of Alan Godfrey Maps (AGM) for its series of map reprints, which have evolved and flourished since 1981.

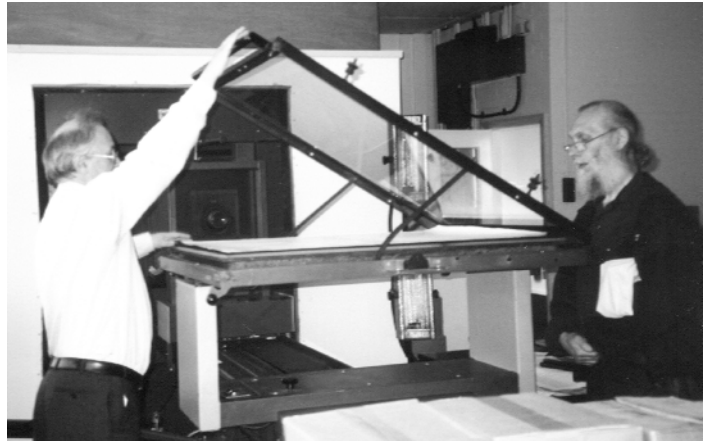
Despite its original use as a small secondary school, the building gave a distinct impression of having been designed for the map trade, so skilfully had the two floors been adapted. Alan welcomed us to the Board Room and, after a brief introduction, divided us into convenient groups of four for guided tours of the key areas. Of course this meant that each group toured the building in a different order, so it seems simpler to describe the various processes in a more logical sequence.

The logical tour therefore commenced with the Map Library and allied archival material on the upper floor. Here John Griffiths explained the basis on which original OS maps at a variety of scales (of which AGM holds several thousand out-of-copyright examples) are selected for reproduction. Comprehensive coverage is being aimed at in the one-inch series, but otherwise sales potential is a major consideration. Within such factors AGM places great emphasis on the print quality of the originals and is extremely reluctant to compromise on this criterion. The definition of railway lines is reckoned as a good indicator of the likely quality of the resulting negative. Many unwanted markings can be touched-out on the original, but pink colouring and red lines are impossible to photograph. If a suitable original isn't already held, maps may be bought specially or borrowed from a number of collaborating collections.

One of the key features of AGM's continuing success in a variety of specialised markets, including local, family and railway historians, has been the wide range of local interest

material prepared by ‘cut and paste’ methods and printed on the back of the main maps. These extracts are compiled from many different sources – even including ‘fun’ items. Many are held in the firm’s own archives, such as Kelly’s directories, railway timetables, “Who’s Who”, period photographs, OS publications, and other map sundries like geological and index maps. Specially commissioned notes from experts in many fields have been increasingly used; these have been praised as “unrivalled introductions” to the areas concerned and have become something of collectors’ items in their own right.

After a break for an excellent buffet lunch, the logical tour continued with Alan himself as our guide through the black-and-white photographic processes, which are now apparently almost unique in a trade which generally prefers scanning for colour work. The huge Littlejohn 231 camera is now quite rare, and was in fact acquired from AGM’s printing contractors, Petersons of South Shields, when they moved over to scanning for their own work. It looks for all the world like a giant version of the once familiar hand-held bellows camera, but this monster’s solid steel construction means that it can only be located on the ground floor of the building. Alan assured us however that it is by no means ‘prehistoric’ and it remains unrivalled for the fine work which the product demands. A dehumidifier protects the working environment.



Rodney Leary looks on as Alan Godfrey places a sheet in the copying frame
Richard Oliver

He then took us through the whole process of mounting and squaring-up the map to be copied and adjusting the focus of the image on the screen at the back of the camera, conveniently accessible from the adjoining Dark Room. Then with the aplomb of a Victorian portraitist he pressed the button for exposure, and passed the resulting map-sized negative through a series of state-of-art automatic chemical tanks for developing, fixing and washing. After the drying process any flaws remaining from the original can be cleaned up on the negative, which is then ready to go to Petersons for printing.

As the final stage of the logical tour Donna Fiddes showed us her warehousing, despatching and stock control responsibilities. On arrival from Petersons, reprinted and newly published maps are sorted into the appropriate Picking Stock Boxes. These are arranged alphabetically by title within their ‘old’ geographic counties, except for the one-inch reprints, which are numbered within the original England and Wales series. The colours of the folded covers might seem arbitrary, but they are in fact carefully chosen so that no adjacent maps within the county boxes are identically coloured – this greatly speeds selection to meet customers’ orders, whether on pre-printed forms or otherwise.

The general public can buy maps singly by mail order, but the bookshop trade must order in tens to qualify for the appropriate discount. World Cup fever seems to have been one of the few impediments to AGM’s steady daily flow of orders; and the regular subscription list has to be serviced whenever a new map arrives from the printers; the aim is to turn around orders on the day of receipt. Outgoing mail is packed in Micro-lite envelopes, Jiffy bags or

boxes according to size, and usually manages to fill a mailbag every day. The consequent book-keeping is a recurring chore and stock levels have to be monitored to trigger reprinting. As many titles as possible are kept in print and AGM aims at print runs of 1200 for the best-selling London series, with rather less elsewhere.

When each of the groups completed the last section of the tour, we returned to the Map Library for a background talk and question and answer session. Alan encapsulated the firm's twenty-one year history as "change without making changes" and illustrated this with a specimen of the first map in the present format, *Gateshead East*, easily recognisable apart from its four rather than five panel layout. Historical notes and extracts were already there, and coloured covers followed in 1982. The map world in general has seen many changes, but AGM sees no reason for fundamental redesign of a successful product.

Alan went on to recall how he had enjoyed doing the background research for the Holyhead map. 'In-house' expeditions to unfamiliar parts of the country complement the work of twenty or so regular authors to write up around 2400 words of notes for each map. Often, as with maps such as Leadgate, the notes provide the only short and readily available introduction to the history of an area.

With some 1500 maps derived from the twenty-five inch originals (reduced to fifteen inches to the mile for printing) AGM still has plenty of material in hand before it exhausts the estimated 3000 viable sheets at that scale, but it has no intention of resting on its laurels. The idea of reprinting from the OS one-inch series emerged from a chance remark at the firm's 1996 Christmas Dinner, leading to the reprint of the Holy Island map. These maps have provided a context for the larger-scale areas and are making it possible to cover the more remote parts of the country. The fixed sheet lines of the OS originals resulted in impractical 'leftover' areas like Whitby, or Foulness & Mersea, but reprints can be joined edge to edge to make more viable combinations. By such means it is hoped ultimately to cover the whole of England and Wales at this scale.

AGM's published maps no longer include cartobibliographical detail, but Richard Oliver, who was attending, was then invited to give us some pointers in this direction. He explained for example that the North of England sheets derived largely from the "Old Series", while the rest of the country used the "Revised New Series" or the Third Edition. He cited the problem of the Portsmouth and Isle of Wight map, which displayed anomalies in the original engraving. The island had been surveyed at an early date, at a time of invasion scares, and with shallow engraving, while the mainland had been resurveyed in the 1870s with deeper engraving, giving a crisper appearance. Differential wear on the plate resulted in uneven quality, unfortunately rendering this particular map unsuitable for reproduction.

The session closed with several questions about modern developments in map production. AGM's business has not been significantly affected by the advent of CD-ROM or web-based mapping. Customers want a broader area than the Internet can provide, and twenty-five inch maps are currently too large for the scanner screen. Scanning may be satisfactory for coloured maps, but remains poor for AGM's chosen speciality of black-and-white engraved maps, where photography alone can provide the required quality. We ended with a lively debate on the evidence of coastal erosion at Dunwich and Spurn Head and a reminder that many London sheets have been successfully published in several editions, which illustrate the growth of suburbs through a variety of survey dates.

The meeting then adjourned to the warehousing area where members were given four examples of the firm's products, covering various scales and parts of the country. Copies of

the latest catalogue and one-inch index sheet were accompanied by a specimen order form, though we did not need to submit this by post. We were invited to browse through the Picking Stock Boxes (hopefully without awful consequences to their careful arrangement) and purchase anything which caught our fancy. When we returned to the Board Room for final refreshments everyone seemed to have a few choice specimens for their own collections. Altogether a most enjoyable day!

‘Discovering Lost Ways’ Project

Alan Bowring

This article provides the background to an initiative which should result in considerable improvements to access to the countryside of England and Wales. Members of the Society may feel that they have the interests and skills to make a positive contribution to this project.

The Definitive Map

Each highway authority in England and Wales has a duty to maintain a Definitive Map of public rights of way for its area. This is the legal record which shows the location of public footpaths, bridleways, ‘byways open to all traffic’ or ‘BOATs’ and, at least for the present, ‘roads used as public paths’ or ‘RUPPs’.¹ From time to time an authority will receive applications from members of the public to modify what is shown on the Definitive Map by, for example, the addition or removal of a path, varying its route or status or else making some change in the particulars of the route recorded in the ‘Statement’ which accompanies the map. Many such applications for ‘Definitive Map Modification Orders’ are made, but only those which can be demonstrated to be founded on sound legal evidence will ultimately be successful, often after the arguments have been rehearsed at a public inquiry.

So the ‘Definitive Map’ is quite clearly not ‘definitive’ – in fact it is only considered to be conclusive proof of those rights which are shown on it. Other public rights of way clearly exist, and in addition higher rights may exist over routes already shown on the map, so, for example, a public footpath may carry higher rights or full carriage rights. Thus there is a considerable degree of uncertainty surrounding the extent of the rights of way network in a locality to the dismay of both landowners and path users, albeit perhaps in different ways!

Closing the Map

In an attempt to remove this uncertainty the Countryside and Rights of Way Act 2000 contains a controversial section² which puts in place a cut-off date for the addition of new routes to the Definitive Map based on historical evidence. The date is set at 1 January 2026.³ At that time any historic rights of way which have not been recorded on the Definitive Map will be extinguished. This measure also extends to the extinguishment of any higher rights along any routes which are recorded – so unrecorded bridle rights along a route shown

¹ The Act also provides for all those RUPPs which have not yet been reclassified under the Wildlife and Countryside Act 1981 to be reclassified as ‘restricted byways’ – a new category of right of way available to walkers, cyclists, horse riders and non-mechanically propelled vehicles i.e. horse-drawn carriages but not 4WDs or motorcycles.

² Sections 53 to 56.

³ There is scope for this date to be varied but it will not be later than 2031.

merely as a public footpath on the map will also disappear. The term ‘historic’ here refers to rights of way which existed on or prior to 1 January 1949, when the National Parks and Access to the Countryside Act, which gave rise to Definitive Maps, became law.

Understandably there is, on the part of path users and their representative organisations, considerable concern that between now and 2026 every effort is made to get as many as possible of these unrecorded or ‘lost’ ways recorded on the Definitive Map. It will be no use presenting firm historical evidence of the existence of a hitherto unrecorded footpath, bridleway or byway after that date – the rights will simply no longer exist and cannot therefore be shown on the map.

It should be said at this point that it will remain possible to add footpaths and bridleways based on evidence of use by the public after 1949. The ‘twenty year rule’ which will be familiar to some readers will continue to operate. That is to say that uninterrupted and open use of a route by members of the public for a period of twenty years or more amounts to deemed dedication of the route by the landowner as a right of way of status appropriate to the type of use. The use should be ‘as of right’ and not with the express permission of the landowner.

A research project

The Countryside Agency has ordered research into the development of a systematic approach to the cataloguing of unrecorded routes throughout England.⁴ This is the so-called ‘Discovering Lost Ways’ project. The project will rely on the work of both rights of way professionals and informed amateurs. Its eventual success is dependent on a huge amount of research being carried out in thorough fashion. Key documents which are routinely referred to in dealing with Modification Order claims include Enclosure Awards, 1910 Finance Act records, tithe records, deposited plans of railway and canal companies, quarter sessions records, estate records and OS twenty-five inch second edition, six-inch first edition and one-inch first edition maps amongst others.

The project will be seeking to recruit enthusiasts willing to spend time in such treasure troves as the Public Record Office at Kew and county records offices, and for which expenses would be reimbursed. It is hoped that the project may also prove attractive to rail and canal enthusiasts, to family historians and other specialists as well as to the countryside access researcher.

It has been estimated that there may be some 18,000 km of ‘lost ways’ in England and Wales although the figure could be rather less or rather more – this should be compared to the figure of 180,000 km for the recorded network in England. There may be as many as 500 ‘new’ routes appearing on the Map in a typical shire county.

More information about the CROW Act 2000, the cut-off date and the ‘Discovering Lost Ways’ project is available on the Countryside Agency’s website at <http://www.countryside.gov.uk/access/lostways.htm> and on the IPROW website at <http://www.iprow.co.uk/docs/lostways.pdf>. The course which the project takes has yet to be finalised including who manages it at national and at local level but it is certain that the work needs to be done and that enthusiasts who can contribute would be welcomed.

⁴ The Countryside Council for Wales is taking a different line.

*The gorilla and 433 million TOIDs:
a Commons select committee and the Ordnance Survey
Richard Oliver*

Ordnance Survey has recently been subject of two investigations. One has been a Quinquennial Review, which has recommended that it change from Trading Fund to Government-Owned Public Limited Company (GOPLC). An official decision on this recommendation by the responsible Minister was awaited as *Sheetlines* goes to press. The other has been by the Urban Affairs Sub-Committee of the Select Committee on Transport, Local Government and the Regions, appointed by the House of Commons. This Sub-Committee has a general remit to examine the executive agencies of the Department for Transport, Local Government and the Regions. It visited OS at Southampton on 15 January 2002 and examined Vanessa Lawrence, the Director-General and Chief Executive of OS (DGOS), and two of her senior colleagues, David Willey and Steve Erskine, respectively Deputy Chief Executive & Director of Business Change and Managing Director of Graphic Brands. As a result of this evidence the Sub-Committee decided to investigate further. Its terms of reference included pricing in relation to copyright, the effect of current pricing on planning appeals, licences for guide books, the cost of maintaining databases, the effect of new technology on costs, and the provision of mapping for electioneering. In the event most of these are not covered by the Committee's report, which was issued in June.¹

The Report

The Report notes that 'Ministers and OS have responded with enthusiasm' to the GOPLC proposal. The Sub-Committee did not think that the Quinquennial Review had adequately addressed wider issues, such as the dual role of OS as a public service and as a commercial organisation, the boundaries between OS's operations and those of its licensed commercial partners, and the difficulties caused in pricing and copyright by OS's market domination.

The Sub-Committee notes that in general OS mapping is highly regarded, and that the *MasterMap* digital database now being developed is expect to be an entirely new concept in digital mapping: 'It will constitute a valuable national asset'. 'OS produce a bewildering range and variety of products for different and often highly specialised markets.' OS's paper maps only provide 7.5 per cent of its revenue. The pricing mechanism for OS data 'can be complex' though OS claims that it is being simplified.

Many witnesses, who are both large and small users of OS data, complained to the Sub-Committee of the cost of OS data. The utility companies provide 23% of OS revenue and are concerned about new pricing arrangements: price increases of 25% to 50% are anticipated, and they may be forced to look for alternative ways of mapping their assets.

'There is doubt as to whether high prices are justified by the costs to OS of data collection. Witnesses highlighted the reduction in the costs of surveying.'²

¹ This review of the Report and the accompanying memoranda and minutes of evidence was prepared using hard copy obtained from the Parliament website: <http://www.parliament.uk> (Parliamentary copyright 2002). This has had some effect on the precision of the referencing in the footnotes, but the structure of the report on the website should enable any references to be readily followed up.

² [It is not clear precisely what the evidence for this is.]

The report notes that, thanks to renegotiation, the cost of a site licence for the *Address-Point* dataset has fallen from £800,000 to £120,000 and this ‘suggests to us that a similarly vigorous series of renegotiations may prove advantageous to all parties.’ Future OS pricing policy may be affected on the one hand by Her Majesty’s Stationery Office (HMSO) proposals whereby not-for-profit organisations could have to pay the same copyright rates as private companies, and on the other by European Commission proposals to widen public access to official data, which are intended to help not-for-profit bodies.

The Sub-Committee considers it reasonable for OS ‘to charge the full cost of providing the maps... but... should not be seeking to obtain a return... in order to cover its general overheads nor to contribute to the costs of map data collection’.

About £14 million is paid to OS by the Treasury under the National Interest Mapping Services Agreement (NIMSA): it has been suggested that some of this money could be used to subsidise paper map prices, but this may be in breach of both domestic and European competition law. There are allegations that NIMSA funds have been used to subsidise OS’s commercial activities, and the Sub-Committee feel that there should be greater transparency in how this money is used.

Witnesses said that OS data is not being used to its full potential either by local or by national government. There are various service level agreements (SLAs) with both individual national government departments and groups of them. A pilot scheme for a ‘Pan-Government SLA’ started in April 2002, and should cover all national government departments in return for a single fee, but as yet only a year’s funding has been agreed. The Sub-Committee recommends long-term funding for this.

The Committee notes that OS does not provide all geographic data needed nationally. Various licensed partners supply derived products and re-sell data. There have been conflicts between OS and some of these partners, and some suggest that OS should concentrate on its core activities and leave derived products to its partners. One complaint is that OS will bring out a product competing with one previously developed by a partner. The Association for Geographic Information (AGI) argues that these problems arise from OS’s dominant position and its obligations to recover its full costs and make a return on capital. The OS and its Minister both deny that there is a monopoly, but their customers and partners disagree. The AGI suggested that OS should withdraw from activities which could be provided by other companies or organisations.

‘Unfortunately, the Quinquennial Review failed to address this problem, which has been at the root of many of the complaints about OS received by the Sub-Committee.’ The Sub-Committee concludes that there is ‘a clear need to define the boundaries of Ordnance Survey public service and national interest work’, and any commercial activities ought to be separately accounted for: ‘its commercial arm should pay the same copyright fees as any other organisation/competitor’. ‘The establishment of some sort of regulator or arbitrator’ could reduce the number of cases where OS is in conflict with other organisations, and provide a channel for grievances to be dealt with short of recourse to legal action.’ Witnesses pointed to the difficulty whereby OS is ‘regulator, supplier and competitor’. There is a possible role for HMSO as regulator with greater transparency in setting prices, which could remove advantages enjoyed by educational and charitable organisations, but which might equally mean that OS might be asked to distribute its data below cost. ‘Obviously this would be at odds with commercial objectives.’

At present, the OS acts as adviser on geographic information matters to the Government. Both witnesses and the Sub-Committee believe that there is a conflict of interest here, and that what is in fact objective advice from OS will appear biased, simply because it comes from an interested party. The Sub-Committee approves of the AGI suggestion that there be instead a small team of experts, to comprise the DGOS, the Chairman of the AGI, and one or more representatives of the commercial sector.

The Quinquennial Review considered that the change to Trading Fund status in 1999 was ‘a successful step forward’, but that ‘the additional commercial freedoms offered by GOPLC are considered essential’ if there are to be further improvements and ‘deliver its full potential’. The Minister is minded to accept this, and to proceed to a Stage Two review to establish the best structure for OS as a GOPLC. The DGOS stated in evidence that OS supported GOPLC status as it would make it easier to borrow money and give greater freedom to pay higher salaries, comparable to those in the private sector.

‘There is nothing to suggest that the proposed change to a GOPLC would address the problems of OS’s status as a commercial and public service provider in terms of cost recovery, regulation, costs, competition and the boundaries of OS business: nor that the issues of borrowing money or rewarding staff are such as to be solved by a change in legal status’.

The Sub-Committee notes the AGI’s view that greater commercial freedom for the OS will cause further worry to those brought into competition with it. The Quinquennial Review cites Consignia [otherwise known as the Royal Mail] as an example of how a commercial operation with a strong public interest can operate within the public sector; however, a recent investigation of Consignia by the House of Commons Trade and Industry Committee suggests that the conflict of public service and providing a return to its shareholder, the Government, has not been resolved.

Although the Quinquennial Review rejected privatisation of OS for a number of reasons, including problems of long-term data supply and conflict between national and commercial interests, GOPLC status could be a step in that direction. The Sub-Committee concludes:

‘The Committee is strongly opposed to Ordnance Survey’s proposed transition to Government Owned Public Limited Company and sees no case at all for change from its current status. Ordnance Survey has experienced no problems with borrowing while operating as a trading fund... The Committee recommends that the Government rejects the option...’

The evidence

The report is accompanied by both written memoranda and minutes of evidence from witnesses. Together these both elaborate points in the report, and cover other points. Space precludes a comprehensive summary of the evidence, but it includes a submission from Christopher Board, best known to readers of *Sheetlines* as the Chairman of the Charles Close Society, who writes on behalf of the now disbanded Royal Geographical Society - Institute of British Geographers educational consultative committee, pointing to the potential difficulty if HMSO imposes uniform charging.³

Of the written evidence, that from OS itself is, as might be expected, the most revealing. The higher unit cost of digital data is apparent from 75% of business and 92.5% of revenue coming from digital data. OS *MasterMap* contains 400 million geographical features, and about 5000 changes are made every day. It contains a ‘pre-build layer’, i.e. proposed

³ Memorandum by Christopher Board, OS 06.

developments. There are 450 field surveyors in nearly 70 local offices. It costs £30,000 to revise a 1:50,000 sheet: many 1:50,000 and 1:25,000 sheets sell ‘in very small numbers’, over half the 1:25,000 *Explorers* are not profitable, and some sell only a few copies each year. The respective retail prices of the 1:25,000, 1:50,000 and 1:250,000 series reflect the time and effort put into each. Revision of the 1:25,000 and 1:50,000 will be facilitated when direct derivation from the *MasterMap* database is adopted.⁴

There are further revelations in the verbal evidence from Vanessa Lawrence, David Willey and Steve Erskine. The OS Board is not in favour of privatisation. There are difficulties in recruiting geographic information specialists, and constraints on salaries have made it particularly difficult to recruit directors. Were OS able to borrow more freely, it would be looking to repay very fast, within two or three years. The three directors of OS, Ordnance Survey of Ireland (OSI) and Ordnance Survey of Northern Ireland (OSNI) meet together at least once every six months: it is likely that OSI and OSNI will adopt OS’s system of TOIDs, or unique topographic identification numbers. At present there are several databases, but in future everything will come from OS *MasterMap*.⁵ (Mrs Gwynneth Dunwoody, one of the two chairmen of the Committee, observes at one point: ‘I do not like the idea of 433 million TOIDs. I think they will take us over.’⁶)

The 1:25,000 *Outdoor Leisure Maps* (now subsumed into the Explorer Series) just about break even, or make a very small loss. The 1:50,000 *Landranger* loses about 2%, and the *Explorer* series about 40%; the latter was 60% before the price increases in November 2001. The use of laminated and waterproof paper has been investigated, but durability of mapping does not appear to be a major concern of users. The 1:50,000 project maps, covering 20 km × 20 km, are being phased out for lack of demand.⁷

Christopher Roper, Founder and Director of Landmark Information Group, which sells a combination of current and historic OS data, points out that the Treasury is the ultimate arbitrator of what OS charges, that OS must cover its costs from a narrow financial base, and that mapping is only a small part of the costs of any activity. He also puts his finger on what is arguably a persistent problem with OS [and might be worthy of a monograph]: that most citizens only see a small part of OS’s activities. In his verbal examination he said that it would not be helpful to have several suppliers of large-scale data, as there would be different positional standards to which other data would be attached. In a subsequent memorandum, he suggests that the breaking-up of OS should be investigated, including the contracting-out of both surveying, and the production of small- and medium-scale mapping. ‘Ordnance Survey is the 800-pound gorilla in the Geographical Information marketplace.’⁸

The AGI notes that there is a lack of objective evidence as to whether OS really is ‘the best in the world’, though it is unquestionably widely admired. There are problems with analysing OS activities, which can be divided into: surveying; maintaining its database; selling digital data; and publishing paper maps; only the paper maps can readily be separated from the others. Surveying and printing could be contracted out, but such restructuring might be too expensive for OS because of the consequent redundancy costs. However, there is a

⁴ Memorandum by OS, OS 22.

⁵ Examination of witnesses, questions 3, 7, 12, 17, 34-6, 106.

⁶ Examination of witnesses, question 104 [end].

⁷ Examination of witnesses, questions 29, 30, 39, 55 (note 4), 116.

⁸ Memorandum, OS 1; Examination of witnesses, question 198; Supplementary note, OS1a.

natural data in collecting data once, and using it many times. It is less clear to AGI that OS has a role in disseminating postal address information, in conjunction with Royal Mail.⁹

Both the Open Spaces Society (OSS) and Central Council for Physical Recreation believe that voluntary bodies acting in the public interest should have access to OS mapping without having to pay royalties. However, whereas the OSS does not envisage using other than OS mapping, the National Joint Utilities Group (NJUG) is less certain. NJUG contends that the introduction of *MasterMap*, with associated changes in pricing and database structure, may incur cost increases of between 25 and 200 per cent, with dubious increased benefit to their business, and so NJUG members have considered using ‘alternative mapping service providers’.¹⁰

Some comments

The Sub-Committee’s report does not appear to be wholly satisfactory. The fundamental problem with OS is one of finance, but the Sub-Committee do not appear to have grasped OS’s finances properly, and their recommendation that OS ‘charge the full cost of providing the maps... but... not be seeking to obtain a return... in order to cover its general overheads nor to contribute to the costs of map data collection’, if taken literally, would be a reversion to a practice long since abandoned and which would probably mean HM Treasury having to find £70 million of ‘new money’.

Let me explain. Until 1966 OS was effectively wholly financed by taxation: the direct costs of mapping to users were based on the marginal cost of printing individual copies. As a result of an investigation of OS by the Commons Select Committee on Estimates of 1962-3, after 1964 the basis for charging was changed so as to seek to recover some of the costs hitherto borne by the Exchequer.¹¹ At first the price increases and cost recovery were modest, but in the 1980s and 1990s both grew substantially: by the later 1990s cost recovery was of the order of 90 per cent or more. Most of the price increases were borne by 1:10,000 and larger scale mapping and the associated digital data, for which the main customers were large organisations such as the utilities, who were well able to pay, as the total cost of mapping was only a small part of their total costs. The increasing cost of large-scale mapping to the ordinary citizen was not, in this scheme of things, of great moment; OS has never had great electoral visibility. The saleability of the digital data, which originally was a by-product of the map production process, was increased by the development of such datasets as *Address-Point*, which was developed in collaboration with the Royal Mail.

However, it became apparent that Full Cost Recovery, though desirable, was ultimately unlikely, were the OS to continue to map the whole of Great Britain to a uniform standard of consistency and scale; customers made it clear to OS that compromising the quality of part of the data would by implication compromise the quality, and saleability, of the whole. The unachievability of Full Cost Recovery was never stated in such crude terms; instead, perhaps inspired by the heavy subsidisation of the railways in order to make them a commercial proposition for privatisation, the concept of NIMSA – the National Interest Mapping Services Agreement – was developed. By this means OS could be paid what was effectively a subsidy, notionally given to cover unremunerative survey and mapping activity, and

⁹ Memorandum by AGI, OS 13.

¹⁰ Memoranda by OSS, NJUG and CCPR, OS 15, OS 20, OS 21.

¹¹ W A Seymour, *A history of the Ordnance Survey*, Folkestone: Dawson (1980), 319-23.

magically Full Cost Recovery became a reality, in headline terms anyway, though the OS has in common with the railways the fundamental truth that, in crude commercial terms, it makes a loss. Still, with the prospect of a surplus for the first time in its history, OS proceeded to Trading Fund status in 1999: lest this be though a symptom of the age, let it be recorded that such a move had first been proposed in 1973. If the Treasury approved book-cooking is set aside, then GOPLC status has a certain logic.

But this is to disregard the fundamental nature of OS. The Appendices to the Sub-Committee's report contains some interesting figures. OS turnover in 2000-01 was £99.6 million with a trading surplus of £8.1 million. In the twelve months to October 2001, £15.7 million was earned from government departments (including £3.95 million from HM Land Registry). The Sub-Committee's report quotes a figure of about £14 million for the NIMSA contribution.¹²

Taken together, these suggest that at least 30% of OS's income comes from central government, so that, so far from being self-supporting, 30 per cent of the £100 million turnover is contributed by the taxpayer. It becomes a question whether more of the other 70% might be contributed by the Exchequer, too.

Even if such robbing-Peter-to-pay-Paul is set aside, there is still the problem of OS's proper objectives: are they to be a commercial organisation, or to serve social ends, or to endeavour to mix the two? The contradiction is well seen in small-scale maps policy. The 1:50,000 *Landranger* map makes a slight loss, but as it is the standard military map of the country it is probably immune from serious challenge. The 1:25,000 makes considerable losses; they are not as great as they were, but that has been at the expense of republishing it in large-format *Explorer* sheets which offer some competition to the 1:50,000, which may be met by further alteration of the 1:25,000 sheet lines. The 1:25,000 is essentially an Ordnance Survey creation of the 1940s which, by the time it became apparent that it was a questionable move, had gone too far to be readily abandoned; each time that its future was questioned, the Ramblers Association and others uttered howls of protest.¹³

Contrast that with the 1:100,000: the map which remains a dream. Its 1:126,720 predecessor was abandoned in 1961, for the good reason that OS was seriously short of drawing staff, and there was an acceptable commercial alternative: since then there have been a succession of OS and commercial makeshifts, none of which offer anything comparable with the standard of OS 1:50,000 and 1:25,000 mapping. There have been repeated requests for such a map in recent years, not least from cyclists, and when OS held a forum on cycling mapping in July 2001, it looked as though progress was being made. But no: OS seems to have decided that a 1:100,000 is not 'commercial'. Neither is the 1:25,000: but it has its foot in the door. One suspects the real reason is that a good 1:100,000 would further erode sales of that sacred cow, the 1:50,000.¹⁴

Put bluntly, OS is in a mess, but the sub-committee's report does not offer a way out.

¹² Report of Sub-Committee; Memoranda by Ordnance Survey, OS 22, OS 22(b).

¹³ Richard Oliver, 'Episodes in the history of the Ordnance Survey 1:25,000 map family', *Sheetlines* 36 (April 1993), 1-27.

¹⁴ Richard Oliver, 'Maps for cycle touring: past, present, and a possible future', *Cartographic Journal*, 38 (1), (2001), 48-60; correspondence with OS, 2000-2002, in writer's possession.

Photogrammetry in the Ordnance Survey from Close to MacLeod

Peter Collier

The author was the invited speaker at the Charles Close Society AGM in Southampton. We are grateful to Dr Collier for providing this written synopsis of his fascinating lecture.

At the end of the First World War, British surveyors had at least as much experience in the use of aerial photography for mapping as those of any other nation. Arguably, through the pre-war theoretical and practical developments of Fourcade and Thompson and the experience of original mapping in Palestine and Mesopotamia during the war, Britain was the best placed country to exploit the new technology of photogrammetry. However, by the mid 1930s Britain had lost its lead and lagged behind all the major continental powers and the United States in its use of the techniques. A situation which appears in an even worse light if the theoretical and practical developments of surveyors such as Hotine are taken into account. This paper was an attempt to look at the institutional factors that inhibited development and, in particular, at the role played by successive Directors General of the Ordnance Survey in advancing or retarding the development of its use.

Sir Charles Close

The first attempts to interest the Ordnance Survey in air survey were made just after the end of the First World War when Salmon wrote to Close about Captain Gethin, an RAF pilot formerly with the Survey of Ceylon, who was looking for post-war employment in air survey. Close's reply of 4 January 1919, is quoted in Seymour (1980) 'I don't like to commit myself to any very definite opinion as to the future of air-photo survey work, though I can imagine circumstances in which it would be useful.'

Two days later Close wrote to Hearson of the Air Ministry 'I think that there is a field for air photography in surveying: but not, as far as I am able to judge, on the Ordnance Survey. I have discussed the matter here with Winterbotham and Robinson and the former suggests, if I understand him rightly, the limitations of air photography to small scale work.' Close then went on to list the objections to the use of air photos for large scale work. These included the problems of roof overhangs and the need to plot hedge root lines. However, the main objection seems to have been that 'In addition we must have the ground walked over whether the town is surveyed from air photos or not' (Close, 1919).

One idea that Close took up was pictorial maps from air photos, resulting in the air map of Salisbury which was produced at a cost of £240 and sold for 2 shillings (10 pence). Only 500 copies were produced and no further air maps of towns were produced.

The main reason for Close's reluctance to get involved in air survey was probably the financial position of the Survey. In August 1921 he wrote to Behrens making it clear that his main interest was in reducing the staff of the Survey from its pre-war level of 2077 to a staffing of 1462 personnel (Close, 1921).

Evan Maclean Jack

Jack's great misfortune as DG was to take over the Ordnance Survey just as the post-war cut-backs in staffing were having a major impact on the ability of the Survey to perform its tasks. Jack also had to deal with considerable discontent amongst a staff over a range of issues (Seymour, 1980). However, he initiated a series of experiments but these were all unsuccessful for one reason or another. Despite these failures, a decision was made to embark upon an ambitious experimental revision of 1:2500 plans from air photographs. Jack wrote to the Air Ministry in December 1924 outlining the proposed experimental revision (Jack, 1924). Winterbotham, in his capacity as head of GSGS, seems to have taken a close interest in the experiments, and it may be the experience of dealing with civil contractors during this experiment that was to colour his relationship with the companies during his tenure as DGOS. Following a tendering process, the contract was awarded to the Aircraft Operating Company.

The Aircraft Operating Company had great difficulty in producing the photography for the 1925 experiment. Difficulties encountered with camera, films and navigation meant that the photography was not completed until October (Ordnance Survey, 1927). As part of the experiment, the times taken in the field by the field revisers were recorded. Normal revision required 471.5 days, whereas air photo based revision required 229.5 days. However, when the costs of aerial photography and office based indexing and plotting were taken into account, air photo based revision was about 45% more expensive than normal revision (Ordnance Survey, 1927). Jack could still see significant advantages in using air survey methods, despite the higher costs revealed by the 1925 experiment.

For the 1927 season it was intended to fly the Bexhill area and the contract was put out to tender. The Air Survey Company, which won the contract, had great difficulties in delivering the photography to specification. The area to be flown was changed to Brighton but due to bad weather the company had to be given an extension on the delivery date, not finally forwarding the photography until 19 July 1928 (Ordnance Survey, 1930).

The second experiment was not a success and Jack was forced to conclude:

(1) The use of air photography as a form of reconnaissance will tend to increase the costs of Revision work compared with the methods now in use.

1. In order to maintain our present standard of revision, the whole of the ground must be visited by the reviser.

It seemed that air survey could only be made economical in 'closely built town areas' (Ordnance Survey, 1930).

Harold St. John Loyd Winterbotham

Winterbotham took up his appointment shortly after the second report on the experimental revision was published. It seemed to confirm the opinion that Winterbotham had already formed of the role of air survey. Why Winterbotham should have formed such strong, and ultimately erroneous opinions about air survey must remain a matter of conjecture. However, it would be a mistake to think that nothing happened with air survey during Winterbotham's time, and it would do his memory an injustice if his more positive contributions were to be ignored. Winterbotham, like Jack before, recognised that air photos could play a useful role in map revision at large scales if the photography could be acquired sufficiently cheaply. To

that end, he negotiated deals with civil air survey companies whereby, in exchange for permission to use Ordnance survey co-ordinate data for rectification, the air survey companies supplied the Ordnance Survey with free copies of all photographs taken. This deal had a rather chequered history which is glossed over in Seymour (1980), but it illustrates the rather strained relationship between Winterbotham and the civil air survey companies, particularly with Hemming. It also illustrates the demands on the Ordnance Survey, particularly from rapidly expanding municipalities in the Midlands and the south, for up-to-date maps at a time when the Ordnance Survey was still suffering from reductions in its workforce. The proposed solution was that a form of interim revision should be carried out at a lower accuracy than the 'national plan'. Winterbotham suggested a twenty year revision cycle for the 'national plan' with shorter cycles for photo revised sheets (Winterbotham, 1934).

Malcolm Neynoe MacLeod

Fortunately, with the appointment of MacLeod, the Ordnance Survey was given a leader of real vision coupled with an aptitude for playing the kind of political games necessary to achieve the desired ends. That he was able to do this was, in part, due to his ability as an administrator, but also due to his ability to manipulate an influential network of connections within the governmental and non-governmental establishment in Britain.

In parallel with the Davidson Committee, and partly to inform its deliberations, MacLeod initiated a new experiment to evaluate the use of aerial photography for revision. He wanted to see if photography could be used to revise areas of new development around towns, as in those places so many of the old landmarks had been removed that resurvey rather than revision was needed and that may have swung the economic advantage towards air survey (MacLeod, 1935). The Birmingham revision ran into significant problem with the photography, with the civil air survey companies finding it hard to supply photography to the specification required by the Ordnance Survey. By late 1935 the experiment was sufficiently advanced to show that air revision was both practical and offered a 'very considerable saving in time over ground methods. The conservative estimate for this increase of speed is 100% in the built-up areas in which we have to work' (PRO OS 1/40). However the problems associated with acquiring photography of the required quality was to continue to trouble MacLeod, especially as civil contractors were not capable of delivering to specification and the RAF were reluctant and 'have not yet accepted the commitment of taking survey photographs in war' (PRO OS 1/40).

MacLeod was also successful in introducing instrumental methods with the Ordnance Survey. In 1937 the first stereocomparator was acquired, followed by a second in 1939. These instruments were used to develop a system of aerial triangulation for use in a complete overhaul of the 1:2500 plans (Gardiner, 1950). Some contouring experiments were also carried out using the stereocomparators and with a Wild A5 Autograph, also acquired in 1939. Work was also progressing with the Stereogoniometer, two prototypes being delivered to Southampton just before the outbreak of war. MacLeod was keen to get the Air Survey Committee's research laboratory transferred to Southampton, but was reluctant to make a move until McCaw had retired as Secretary to the Committee. He was, however, keen to get Thompson to the Ordnance Survey (PRO OS 1/133). Unfortunately, research at the Ordnance Survey received a grave setback when the Stereogoniometers and the A5 were destroyed in

the air-raid on 30 November 1940. No further developments were to take place during MacLeod's term of office.

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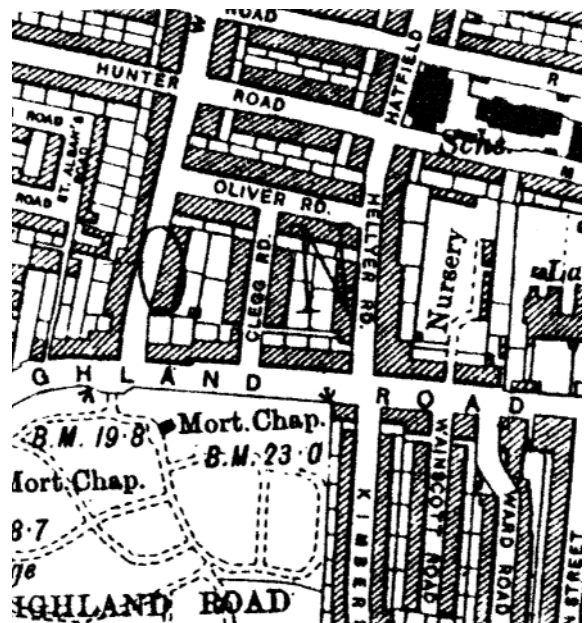
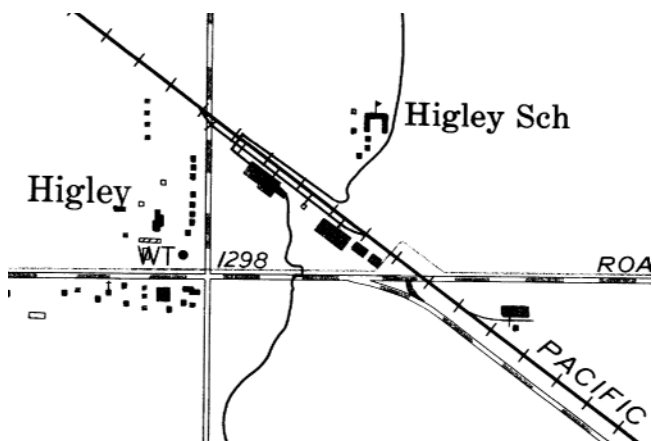
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Puzzle Corner

Aidan de la Mare remarks that it is nice to see the forthcoming publishing collaboration between two prominent CCS members celebrated on this map. What map is it?



Aidan's splendidly apt discovery prompts the Editor to ask vainly (but not, he hopes, in vain), where in the world is this 1:24,000 map of Higley Quadrangle?

Answers in the next issue.

The early years of the National Grid twenty-five inch map

John Cole

Interested readers should if possible, study this article in conjunction with Richard Oliver's 'The Ordnance Survey 1:2500 National Grid Plans', *Sheetlines* 29 (January 1991) and *The Overhaul of the 1:2500 County Series Maps*, Ordnance Survey Professional Papers New Series No 25. Apart from more information on dates and locations, this makes available a report on the first year of overhaul in South Devon which includes details of the various types of experimental field document.

There were essentially four forms of approach to producing the map during the 1940s. In rough order these were (i) reducing and redrawing the 1:1250, (ii) compilation, (iii) resurvey (or reforming), and (iv) overhaul. (i) and (ii) inevitably took place in and around Bournemouth and Edinburgh which were the first places to be tackled at 1:1250 scale. Though it has not been possible to establish when exactly the practice ceased, many 1:1250 maps (well into the 1950s) were surveyed to a geographical rather than a Grid (or map edge) boundary. They were then reduced to 1:2500, and the remainder of the map filled in at that scale. The larger scale map would still be published with the legend 'Unsurveyed at this scale' in the centre (if that space was available) and the remainder blank (amounting to more than four fifths of the map in the case of Edinburgh and Maesteg examples seen).

The most common survey method for wholly or part 1:2500 maps around the early 1:1250 areas was 'Revision Point Compilation'. Surprisingly this is not mentioned in Professional Paper 25 but should have been added to the explanation for 'Detail Points' on pages 19 and 20. The differences were that RPs were fixed to an accuracy of 0.1 metres and DPs to 0.25 metres. Moreover the latter were classed as non-permanent control and did not appear as a symbol on published maps. RPs did appear on all 1:1250 and most (but not all – for reasons which are unclear) 1:2500 sheets.

The earliest example of RP Compilation thus far traced was 40(SZ)0598 at Hampreston north of Bournemouth. Completed in April 1944, the map shows seven revision points. Three were at the angles of fences, hedges, walls or banks, one at a junction of same, one on a building corner, one on a windpump and the seventh mysteriously inside All Saints' Church (unless this is a misprint). All these would have been points of County Series detail and the remainder, part of the River Stour, streams, field boundaries, a farm complex and house, school, rectory and other buildings, was adjusted to the National Grid points of detail and revised. In this condition the map lasted until its next revision in December 1975, though it may have been reprinted and metricated within that time span.

Apart from reduction of the 1:1250, the various 1:2500 methods were briefly as follows:

RP or DP compilation

Originally devised for dealing with small gaps between areas of resurvey at 1:1250 and blocks of largely unchanged urban detail in 1:2500 diagrams, or for 1:2500 on the fringe of 1:1250. The RPs/DPs were points of old detail which had been fixed and co-ordinated by Geodetic Control Division. These points were plotted on to a gridded document (in early days a 40 × 40 centimetre enamel coated zinc plate, but later astrafoil.) and, in the case of astrafoil, superimposed over a printed copy of the latest County Series plan and the co-ordinated detail fitted to the plotted position. Detail which fitted this control within certain

tolerances was traced in pencil before the document was taken on the ground for check. Where the fit was unacceptable it was necessary to break down the mesh of control either by chain survey or, if that was impracticable, by fixing further co-ordinated points followed by chain and detail survey. Finally during the latter, the plan was brought up to date.

RP or DP resurvey

Although the term resurvey is used it was in effect little better than ‘reformed mapping’. RPs or DPs were established, normally in pairs on or near old detail, and a skeleton chain survey carried out. Blocks of County Series detail were fitted to this (in general the largest being about 100 metres square) and then revised. The area to be surveyed by this means would be left blank on the plan and the control points plotted by co-ordinatograph. In a few larger towns (e.g. Brixham, Havant etc.) some maps were completely ‘resurveyed’ but in general, only parts were thus treated. Even so in Launceston where parts of six maps were involved, more than 300 RPs were established.

Resurvey from air photography

Known as the ‘Chelmsford method’, from the only area where it was originally practised. Control was provided by analytical aerial triangulation using the available secondary triangulation stations at roughly 13 kilometre intervals. Again the control points (not published) were plotted by co-ordinatograph. The photographs were rectified for tilt and enlarged to 1:2500. Graphical (as opposed to using a machine) plotting methods were employed (a) to provide subsidiary control and (b) to plot the positively identified detail. This was far more of a resurvey but even so, County Series detail was sometimes unwisely used for areas in shadow or dense vegetation. It was also found to be four times more expensive than the cheapest method at the time, though thoughts were entertained that it might be feasible in either the replotted counties or National Coal Board areas.

Overhaul

Also known as ‘Cotswold’ overhaul – the controversial and most widely used method. By graphic survey methods i.e. lines of sight and short measurements, the position of all National Grid trigonometrical points were surveyed in relation to the immediate detail on the County Series plan. The co-ordinates of these graphically surveyed positions were then scaled on the map from the map corners and compared with the National Grid values of these points. The differences revealed by the comparisons were applied to the co-ordinates of the County Series map corners and the resultant values of the sheet corners were accepted as the National Grid values of the County map corners. An impression of each County map in the area to be compiled was then printed on the field document. These were gridded using the co-ordinates of the control points and the adjusted values of the plan corners. The document (usually astrafoil) was then cut up (Cotswold cuts!¹) and then stuck down on to a sheet of glass on which had been inscribed a true outline and 100 metre grid of a kilometre plan square. These cuts were made as necessary to eliminate the size and shape distortion in the County Series map and to ensure that any control point falling on the plan appeared in its correct co-ordinated position in relation to the inscribed grid. The result was a transparent

¹ *Sheetlines* 62, 57.

positive from which a field document of the map was printed. The print was made by a photographic process which gave a red image when printed on astrafoil. This was then revised in the field and the (usually) small cuts joined up or evened out. As far as was practicable these were made in field boundaries, water courses, tracks or paths, so as not to cause problems on the ground. But as was mentioned in *Sheetlines* 53 there were sometimes difficulties on County Series plan edges, and even more so along some county boundaries where a change of meridian was involved. There have always been very mixed views inside and outside Ordnance Survey on the quality of this method, but in the Serpell Report of 1979 the Royal Geographical Society remarked that 'these overhaul surveys have been in use for many years [thirty by that time] without evoking any great criticism'.

Returning to the immediate post Second World War years at Bournemouth, 40(SZ)0597 was revised in October 1945; 0798, January 1946 and 0698 in 1950. No more surrounding rural 1:2500 then appears to have been tackled until 1953, when most (but not all) of that around the Poole - Bournemouth - Christchurch 1:1250 was completed.

In 1947-8 events shifted to Edinburgh where three experiments were tried to do away with extra control in areas surrounded by 1:1250 or between 1:1250 areas – in this case Musselburgh and Dalkeith. The first was at Arthur's Seat and involved only one map completely revised at 1:2500, 36(NT)2773 - December 1947, but a number of others part 1:1250 (less than half in two instances, 2772 and 2871). The second experiment was at Braids Hills, with 1:1250 on three sides and involving about six kilometres square. The third used a somewhat laborious compilation method and seems to have involved about thirty maps. In all cases any RPs on the published map indicate the limits of the 1:1250 survey.

At the same time the Chelmsford rural area resurvey commenced with five maps, TL6015, 6215, 6314, 6315 and 6415, returned as completed in 1948. A further seventeen followed in 1949. It is not known how many staff were employed but there are indications of considerable 'teething troubles'. This experiment appears to have lasted until 1953, by which time in excess of six hundred maps seem to have been completed.

It has not been possible to locate the part of Wiltshire where the 1939 overhaul experiment took place. The area – some two hundred square kilometres - was not published as National Grid mapping at the time, and indeed no post war 1:2500 was revised in the county until a few maps were so treated in the extreme south of the county in 1954 when much of east Dorset was revised.

Because of 'word of mouth' evidence that the work was shelved for as much as a year, the twenty-five 1:2500 maps constituting ST78SW forwarded in 1949-50 are in all probability the original 'Cotswold' experiment. The location, which included the villages of Chipping Sodbury and Yate, lies at the southern end of that range of hills. There is also mention in Seymour (1982) of an early air revision experiment, which may also have taken place here or on the fringe of Bristol, where a further twenty or so rural 1:2500 maps were completed.

Also by this time overhaul had started in earnest in South Devon. In 1948 an office was established at Yealmpton a few miles east of Plymouth and during the following year eighty-three maps had been field completed and forwarded to HQ at Southampton via Bristol Division Office. It is known that the staff of revisers fluctuated from six to twelve in the first year and it was claimed that when all were assembled 'only the tall men could breathe'. If this was a trifle over dramatic, it illustrates the difficulty the Ordnance Survey often had in obtaining suitable offices, especially in the immediate post war years. The area concerned

contained some fifteen kilometres of coastline and the majority of this was claimed to be good – possibly due to the greater density of trigs and thereby smaller detail survey triangles. Inland it was a different story and the accuracy was good and bad in patches. At least one original error had been as great as thirty metres, whilst one map which should have taken three days eventually took more than twenty-eight. Two roads were bodily altered for complete width; none of these things doing much for morale since in those days a virtually unattainable accuracy of one in five hundred was aimed at.

In 1950 work also commenced locally on resurvey (in the original 1:2500 sense of the word) at Plymstock, lying between Plymouth and Yealmpton, and at Plympton slightly to the north, whilst RP compilation took place in the Newton Ferrers and Wembury areas. Between 1951 and 1956 a significant number of towns were subjected to resurvey at 1:2500 scale and a provisional list includes: Launceston, Saltash and Torpoint (Cornwall); Brixham, Dartmouth and Kingswear, Kingsbridge, Okehampton, Salcombe, Sidmouth, Tavistock, Tiverton and Totnes (Devon); Swanage and Wimborne (Dorset); Cowplain, Emsworth, Havant and Waterloo (Hampshire); Burgess Hill, Haywards Heath and Peacehaven (Sussex). Rather surprisingly missing from the Devon contingent (in view of the size of the built up area even in the 1950s) is Newton Abbot and the adjoining seaside resorts of Dawlish and Teignmouth. There is some verbal evidence of compilation, though no example maps appear to have RPs published. It has not been possible to establish the methods used in the extensive built up areas of south Essex during 1954-56. 1:2500 mapping completed at this time was for Basildon (Langdon Hills, Laindon, Pitsea and Vange); South Benfleet and Thundersley; Canvey Island, Hockley, Rayleigh and Rochford; and Billericay. Braintree (1951/2) fell within the Chelmsford air survey area and with Southend itself having been air surveyed at 1:1250 scale one might suppose that some form of air survey (though it was still not altogether popular in OS circles) would have been resorted to. Such does not appear to have been the case, and it is possible that the latest County Series was so ‘up-to-date’ before being reconstituted onto the National Grid that overhaul was the cheaper option. By 1976 all these areas had been resurveyed at 1:1250.

As mentioned in *Sheetlines 60* a small amount of resurvey took place in the replotted counties of Lancashire and Yorkshire. These included two small pockets of 1:2500 surrounded by the Manchester 1:1250; the rural area between Bolton and Westhoughton, Atherton and Tyldesley; between Oldham and Mossley; the rural area between Leeds and Wakefield and to the north and west of Castleford and Pontefract.

The following is a list of some whole or part² examples examined in the course of research.

<i>Location</i>	<i>Map</i>			<i>Revision Date</i>	<i>Method</i>
Hampshire rural	SZ0598	(7)	whole	April 1944 (Published 1949)	C
	SZ0996	(12)		1954	C
Essex rural	TL6415		whole	August 1948	RA
Gloucestershire rural	ST6470	(4)		1954	C
	ST7484			November 1949	O
Devonshire rural	SX5850		whole	May 1949	O
Yorkshire rural	SE3425	(38)	whole	April 1951	RC
Warwickshire rural	SP1682	(4)		1953	C
Sussex rural	TQ2115		whole	1955	O

² Usually A4 copies, which some libraries have a licence to provide for maps inside copyright.

West Lothian rural	NS9471		whole	1955	O
Edinburgh	NT2773	(1*)	whole	December 1947	C
Musselburgh	NT3571	(1*)		1948	C
Plympton	SX5356	(79)	whole	August 1950	RC
Saltash	SX4259	(94)	whole	February 1952	RC
Torpoint	SX4354	(29)	whole	April 1951	RC
Plymstock	SX5153	(81)	whole	1952	RC
Launceston	SX3384	(136)	whole	July 1952	RC
Okehampton	SX5895	(126)	whole	February 1954	RC
Kingsbridge	SX 7344	(55)		April 1954	RC
Emsworth	SU7405	(27)		January 1952	R(A?)C
Cowplain	SU6911	(21)		November 1952	R(A?)C
Havant	SU7106	(18)		May 1952	R(A?)C
Waterlooville	SU6809	(17)		August 1952	R(A?)C
Burgess Hill	TQ3019	(19)		March 1954	RC
Haywards Heath	TQ3323	(23)		June 1954	RC
Peacehaven	TQ4001	(7)		1954	RC
Bude	SS2006			November 1954	O
Dorchester	SY6990			1956	O
Swanage	SZ0178	(31)		1954	RC
Wareham	SY9287			1954	O
Wimborne	SU0000	(58)		1954	RC
Lancashire rural	SD6805	(16)		March 1953	RC
	SD8608	(6)		1954?	RC
	SD9502	(21)		1954?	RC
South Benfleet	TQ7885			1955	O?
Pitsea	TQ7387			1956	O?

Key: O Overhaul. C Compilation.
 RC Resurvey for part of the map and compilation for the remainder.
 RA Resurvey by air photography.

The figure in brackets is the number of Revision Points counted if any.

* In both cases the single revision points were established to bring detail from the adjoining 1:1250 on to the 1:2500. However in the case of NT3571 the revision point (apparently a fence post or nail in wall) was not published.

The term 'Revision' is adopted as a heading because this was used on the published map even if there was a resurvey element. On maps wholly or partly reduced from 1:1250 the term 'Surveyed' is used for the 1:1250 areas.

In the case of part maps about 35% was available for examination but in the cases of Burgess Hill and Haywards Heath 50%.

All maps listed are in 1 km × 1 km format. 2 km × 1 km mapping was not introduced until August 1959.

Revision Point resurvey/compilation appears to have ceased after 1954 and Detail Point resurvey/compilation after 1958.

It has not been possible to trace the earliest National Grid 1:2500 map derived from reducing the 1:1250 but the location would have been Bournemouth or Edinburgh and would have been the larger scale reduced and redrawn. Photographic reduction commenced after 1949 and is clearly identifiable (vegetation symbols of differing size etc.) on part 1:1250 maps.

In 1957 it was found that simple graphic revision from air photos could speed up the overhaul considerably, yet progress with development was tardy, and ten years on unsuitable

built up areas were still being overhauled by ground methods, predictably building up problems for future revision and Land Registry surveys. Inside that time span, it was found at Lichfield in 1963 that a small town could be surveyed by machine plotted air survey and keyed to the surrounding overhaul. This method was also developed, whilst air photo revision for all remaining overhaul was carried out in local field offices except for some of the more difficult tasks still undertaken at Southampton.

A further word should be added about field documents. As already mentioned, from 1944 to about 1946 the unwieldy zinc plates were used. They were also inconvenient for edge comparison and four edge tracings of standard size (48 cm × 8 cm) had to be compiled. A major improvement, use of which lasted for more than the next thirty years, were butt jointed aluminium plates machined to a tolerance of ± 0.03 mm in length of sides and angularity. There were four to a map (1:1250 or 1:2500) with an anodized surface for penning purposes (later converted to enamel).

However, in 1948 experiments were afoot in South Devon to find the most convenient (and cheapest) overhaul document. At first the work was done on old style field traces – six to the County Series map. The unadjusted National Grid was drawn on these and revisers instructed to work twenty metres over the Grid lines at the edges. Initially the number of traces involved caused a storage problem, taking into account the cramped office accommodation. On receipt of the completed work at Southampton the various traces making up a kilometre square and necessary Grid adjustment was undertaken.

The second form of document tried used 1:2500 black impressions cut up into field cards. This experiment was tried principally as it was thought it would be an aid to the photographic processes involved in reproduction. But in the field they were unpopular due to damage caused by sweaty hands and dirt, difficulty of penning when paper fibres began to rise, and difficulty of edge comparison, plus time spent preparing edge traces.

After a brief return to traces with a reduction in number after a cutting process, which eased the storing and sorting problems, a transparent plastic material known as astrafoil was settled on. The reconstitution onto adjusted National Grid sheet lines was carried out before the map was sent to the field, whilst the transparency allowed edges to be overlaid. The surface was excellent for penning purposes and the only disadvantages were a propensity to split if carelessly handled (it not being unusual to see a document with many sellotape strips) or to shatter if dropped on an edge. Nevertheless this form of document was in use until the late 1960s when the much tougher ‘ozafilm’ replaced it for overhaul work, and ‘permatrace’ for resurvey or revision.

References

Apart from the publications listed in paragraph one, reference has been made to:

Richard Oliver, *Ordnance Survey Maps – a concise guide for historians*, Charles Close Society, 1993;

W A Seymour (editor), *A History of the Ordnance Survey*, Folkestone: Dawson, 1980;
OS Field Bulletins 1951;

Field Division Technical Examination Notes 1958.

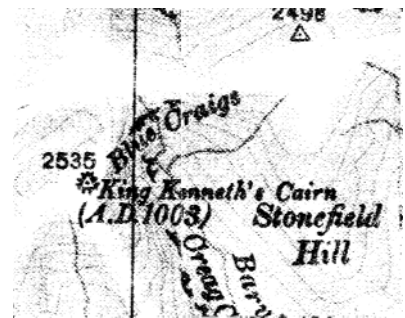
Further reading on the subject of the National Grid 1:2500 maps is to be found in *Sheetlines* 58, 60 and 62.

Beyond our Ken

Peter Warburton

The OS have never been shy of royalty. The densest concentration of loyal name dropping on the one-inch scale is to be found near Balmoral where, as well as the Prince's Stone, the Prince Consort's obelisk and statue, and Prince Albert's Cairn, the map continues to commemorate four of Queen Victoria's daughters, none of them significant historical figures (Princess Royal's Cairn, Princess Alice's Cairn, Princess Helena's Cairn, Princess Beatrice's Cairn).

These ladies are however rather better known than the very unlikely OS royal protégé whose name appears on Scottish Third Edition sheet 47, *Comrie and Crieff* of 1907 and on half-inch sheet 23, *Dundee, Perth and Stirling* of 1913, both based on the 1904 revision. In the parish of Monzievaird and Strowan at a point five miles north west of Crieff at a height of 2535 feet (NN 820287, 776 metres) is the wording 'King Kenneth's Cairn (A.D.1003)'. It seems nicely calculated to rouse the idle browser to inquiry into the who and the why of it.



Half-inch sheet 23

The answer to the first question is that the featured monarch is King Kenneth III, son of King Dubh (Duff). When his father died in 967 Kenneth was a child of five. Under the tanistry system of succession the crown passed to 'the eldest and worthiest of the royal blood' who on that occasion was deemed to be Duff's brother, Kenneth's uncle, who reigned as Kenneth II. Our man's turn came on the death of Kenneth II in 998, but uncle Kenneth's son Malcolm, eight years his senior and evidently an active believer in the merits of primogeniture, was a rival claimant. In 1003, according to one chronicler, cousin Malcolm defeated Kenneth in a battle at Monzievaird. Kenneth was killed and his cousin succeeded as Malcolm II. If this version of events is correct, there was posthumous revenge of a kind in 1040 when Gruoch, Kenneth III's last surviving granddaughter, was instrumental, if Shakespeare is to be believed, in her husband Macbeth's murder of King Duncan, the grandson of Malcolm.

Kenneth III's claim to lasting commemoration is not readily explicable. His short reign was not marked by any achievement of note. The ruthless Malcolm proved more durable, breaking all records by remaining on the throne until his death in 1034 at the age of 80. By that time he had cleared the way for his grandson Duncan's succession by eliminating all Kenneth's descendants except Gruoch. This was certainly not the man to tolerate any cult of Kenneth.

The three serious and thorough guide book series of the period – Black, Murray, Baddeley – deal comprehensively with the immediate district without a single mention of King Kenneth's Cairn. The only reference to it under that name that I have come across is in the work of the notoriously impressionable romantic T. Ratcliffe Barnett, but he was writing in 1924, presumably with OS Third Edition inspiration to hand.¹ To use a favourite cliché of the tourist industry, the cairn seems to have been a well-kept secret. How the OS came to give their seal of approval to this fragile legend is a matter for conjecture but the publication,

¹ Although he uses the Bartholomew form 'Achinochan Hill'.

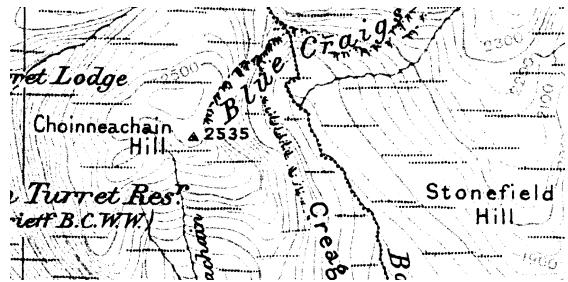
beginning in 1887, of Chalmers' seven volume *Caledonia: or a historical and topographical account of North Britain* offers a possible clue. Chalmers links Carn Chainichin, described as a very large barrow, with Kenneth IV who he suggests was killed in battle nearby in 1003. Unfortunately for this version, one of the few accepted facts is that there was no such person. Another difficulty is that Malcolm did not succeed until 1005. The date on the map combined with the failure to specify a particular Kenneth could be construed as a qualified OS acceptance of Chalmers' account.

Kenneth's OS reign (1907-1928) ended abruptly with the publication of the Popular Edition which names Choinneachain Hill² for the first time but on which not even an anonymous cairn is marked. The Seventh Series and early 1:50 000 sheets are equally neglectful. There are two possible reasons for this cartographic regicide. Firstly, with the appointment of O G S Crawford as Archaeology Officer in 1920³ the OS adopted a more rigorous attitude to the marking of antiquities.

Secondly, Anderson's *Early sources of Scottish history, A.D. 500 to 1286*, published in 1922 maintains that the only credible royal candidate for local commemoration was not Kenneth but his son Giric (erroneously called Grim) who, according to Anderson's chosen chronicler, was killed in the area at some time during his father's reign (997-1005).

This sounds conclusive but a good legend is not easily laid to rest. There is a slowly unwinding postscript. 'Kenneth's Cairn', without the regal attribution and wrongly sited at 2000ft, is mentioned briefly in *The Shell Guide to Scotland* (1965) where it is described as a 'prehistoric burial mound of water worn boulders'. There was definitely something to be seen up there. Curiosity eventually overcame inertia. The visit was made on an ill chosen day in May 2001 when shifting mist added a theatrical touch, but when a long trudge through deep wet heather resulted in a nasty case of rising damp. The area is well supplied with cairns of all types – a tall thin specimen of the 'man' variety, standard hill walkers' cairns and functional piles of stones indicating the line of sunken tracks, but there was no doubting the object of the outing. A miniature boulder field provides a plinth for a stout, very well made cairn of indeterminate provenance; not a dominant landmark but an evocative and out of the ordinary grouping.

Confirmation of the survival of something special prompted inquiry into its current official standing. There does not appear to have been any archaeological survey of the site to establish whether the boulder plinth is a natural formation or the dispersed material of a barrow, but the barrow interpretation is accepted by the National Monuments Record of Scotland. The NMRS helpfully supplied a copy of their record, including the Chalmers/Anderson bibliography used in this note. The record card offers no view as to the age or indeed the Age of the 'very large barrow called Carn Chainichin, The Cairn of Kenneth' and notes the inconsistencies in the conflicting accounts of its origin. There is no

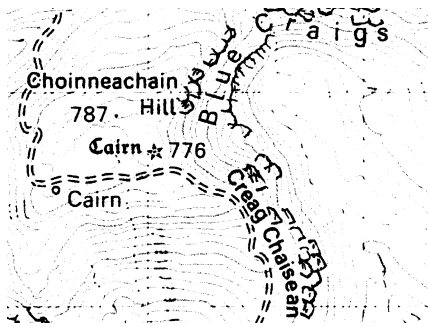


Popular Edition sheet 63, Perth and Strath Earn

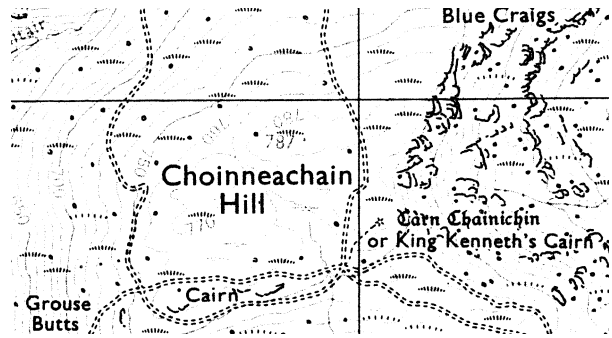
² To someone unlettered in Gaelic, Choinneachain looks doubly promising semantically as bearing a close resemblance to the Gaelic for Kenneth and also because Gaelic/English dictionaries offer the meaning 'lamentation'. However, it turns out to be a mutated genitive form of a word to be translated as moss: hence, Mossy Hill.

³ See W A Seymour, *History of the Ordnance Survey*, Folkestone, Dawson, 1980. Crawford spent long periods travelling the country on his bicycle, making direct observations on the ground. He also developed the system of honorary local correspondents.

plan or sketch but, interestingly, the site description quoted on the record card is one provided by ‘WDJ’ of the OS who visited on 14 November 1968: ‘a circular cairn 18.0 m in diameter with a general height of 1.2 m; a shepherd’s cairn, 0.20 m high, stands on top.’⁴ Known locally as Carn Chainichin or Kenneth’s Cairn’.



Landranger 52, Aberfeldy and Glen Almond



1:25 000 sheet NN 82/92, Crieff

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It is reasonable to assume that this visit marked the beginning of the cairn’s return to the map. *Landranger* sheet 52 records in appropriately antique lettering the presence of an unnamed cairn. At the 1:25 000 scale, the *Pathfinder* series goes further with its reference to a generic King Kenneth, unnumbered and undated. A furtive look at *Explorer* sheet 349, published in November 2001 showed that the restoration movement has not made any further progress. No sale. Of course, if the lettering had read ‘HRH Prince Giric (aka Grim)’s Cairn. A.D. 1003’ the sheet would be worth every penny of £6.99.

Short queries


Integral covers

A few months ago Chris Board enquired if anyone had seen a copy of the Quarter-inch Fifth Series experimental sheet 14, *East Anglia*, with a cover which is an “integral part of the map sheet”, announced by Ordnance Survey in April 1962 in their monthly publication report?

Roger Hellyer responded that he had seen a copy, noted in his cartobibliography of the Fifth Series in *Sheetlines* 37. This copy was in the specimen drawer in the Record Map Library at the OS, but it has unfortunately since disappeared. It has been gone for some years now and he had never discovered where it went. Does this or any other copy still exist?

Chris adds that integral covers were tried out on the double-size sheet, *Ilfracombe*, of the 1:25,000 in 1960, and of course were standard for other 1:25,000 maps. The 1:50,000 *Landranger* maps tried out integral covers on several sheets. The OS agents did not like them because they got dog-eared when handled. Despite some support for the neatness and lightness of such maps, they reverted to card covered products.

Edwardian maps

Having just bought an example, again on a quarter-inch map, Chris Noble asks if covers printed with ‘E  R’, i.e. Edward VIII, are common?

⁴ The vertical values have clearly been transposed.

Using pocket computers

Julian Dommett

I am assuming in this article that CCS members know something about the small handheld computers known as Palms or Pocket PCs. You have at least seen them around. They all look roughly the same - about the size, shape and thickness of a small notebook; obviously not heavy; sometimes in a leather or plastic cover; a few buttons, but no keyboard; just a touch-sensitive screen and a plastic-tipped stick or stylus to tap the screen with, or to 'write' on it. People whip them out of shirt pockets or bags, and start taking notes; or they look up some item of information. It doesn't look difficult. They quickly find what they want. You may therefore be thinking about buying one. The question is, bearing in mind the cost (for they are not cheap, any of them), are they really any better than a traditional paper notebook? In this article I will try to show how they might be. I am of course an enthusiast where these gadgets are concerned, so bear that in mind! But for some they may be very useful.

You are discussing the One-inch Seventh Series maps, and the conversation takes the following turn:

"What a pity the OS abandoned the original olive green for buildings, and went straight over to grey stipple."

"Oh, I think you'll find they tried orange first."

"Nonsense. I've never seen a Seventh Series sheet with orange for buildings!"

But *you* have. It came into your hands not long ago. And it happens that you always note down unusual details. You pull your Palm out of your jacket pocket, switch it on, tap the Find icon, write in *orange* and the Palm starts to list items stored in its memory which contain that word. You let the list build up, and decide that the third item on the list is the one you want. You tap on it, the search ends, and the screen now shows the text it found containing 'orange'. It is a note in a database for Seventh Series maps, and it says 'Buildings in solid orange - not olive green'. Another tap and the full record for this map is revealed. It shows all this detail:

Number 84
Name Teesdale
On cloth Yes
Survey details Full 1950-1951
Published 1955
Edition A
Bought s/h on 02/11/01
Where bought Chichester
Price when new £0.35
Price s/h £1.49
Notes Buildings in solid... *[the full note is revealed if tapped]*

So here indeed is one example of the OS trying out orange before settling on grey. Now, your Seventh Series collection is large, and no other maps turned up in the 'orange' search – so this must be a pretty unusual feature. Whether you really want to announce your find to the people now hotly arguing about this point is up to you, but at least you have put your finger on an actual map, albeit a rare one, that you could show to settle the issue.

In a second-hand bookshop you find an interesting 1:25,000 map – a First Series 'Provisional Edition' copy of sheet 43/08, which covers the area north of Chinley and Chapel

en le Frith in the Peak District. It is an edition A, published in 1948, and inserted in the folds is a bonus: a list of the members of Form 2G in Room 3 at Fleetwood Grammar School, the form mistress being Mrs D M Brown. 28 pupils are listed. (Your sister went to this school) On the back of the list is a neat pen sketch showing 'Area of Access to Bleaklow'. The map itself is unmarked. The cover is in fair condition. Do you have it already? Should you buy? You know '43' means 'SK', so you tap on Find and enter *sk 08* (there is no need to bother with capitals) and the Palm starts listing what it has found. You tap on the first item listed, and the full record appears on the screen:

```

Number 0742 West [this database lists 1:25,000 maps in Pathfinder number order]
Name/area covered Chapel en le Frith
Older sheet no. SK 08
First series Yes
Provisional edition Yes
On cloth Yes
Survey details None
Published 1948
Edition A
Bought s/h on 14/03/87
Where bought Horsham
Price when new £0.15
Price s/h £1.00
Notes Map defaced with...
```

It is exactly the same map: you'd forgotten you had it. You tap on the note to expand it, and see: 'Map defaced with green pencil across top half; torn cover'. So the map now in your hands is a better specimen, and also has this interesting list of pupils (which you will want to show to your sister). So you pay the modest £2.00 being asked without another thought.

Do pocket computers beat the trusted paper notebook? Well, with the word 'orange' as your only clue, just how *would* you find the Teesdale map in a notebook or a Filofax? As for the Chapel en le Frith map, you might well have it on a list, but which one? You could have several lists in more than one notebook. Would it be convenient to carry all of them around with you? And could you look up what you wanted in just a few seconds? With a pocket computer you could, with just a few taps of the stylus. You might start with one very simple database, just a couple of headings for *Number* and *Name*, say, and then gradually extend it as new elements of your collection become important (like which edition, or what style of cover). It's easy to sort the maps you list into any order you like. You can shuffle the headings around too. You can set up additional databases by cloning the original – a different database for each series, perhaps. You can move map information between your databases. Any new stuff just slips in between whatever is already there: you don't need to leave any space in advance, like you must with a paper record. You can change or overwrite details with ease. You can add notes at will. There are no crossings-out. It all looks neat, tidy, legible; and you can take a print of it off your desktop PC.

A database program I use and would recommend, with versions for both Palms and Pocket PCs, is HanDbase. Surprisingly, neither the Palm nor the Pocket PC comes with a database program already installed. HanDbase is a good balance between cost and sophistication, and is one of the standard programs if you have a collection to list. It will do arithmetic, too, and you can set it up to work out the growing cost of your obsession!

I especially use my map databases to check out anything I find in second-hand bookshops. It makes me extremely well-placed to indulge in serious 'map-hunting', and I

buy many more maps than I should (beware of this side-effect). One thing databases can also do (as they are basically a table of facts, which can be sorted in many different ways) is to draw attention to changes of detail: such as when this or that feature was introduced on the map. If you are into this kind of thing, a large database can be a joy to set up.

I hope this has stimulated your appetite for going electronic.

Romer and his Romer: an addendum

R T Porter

May I add a postscript to my note¹ on Carrol Romer?

The announcement² of his death (at Eastbourne) gives his children as John, Ann, Martin and Juliet. The eldest may perhaps be identified as John Carrol Romer, who then followed his father to Gonville and Caius, graduating BA (1933) and MA (1937).³

A major omission was my failure to consult Peter Chasseaud's magnum opus,⁴ which draws freely on Romer's typescript diary, in the possession of his son, John Romer (p. 542); the Duffy photograph of Romer is also reproduced (p. 526). I summarise a few highlights.

In Egypt Romer had worked under Keeling⁵ at the Helwan Observatory, and undertaken levelling and triangulation in the Nile Delta (p.53). Because of his survey experience, Col. Edwards of the Cambridge University OTC urged him to accept a maps job in the War. He left London for France on 24 February 1915, and was attached to First Army Intelligence, becoming "Maps", First Army: i.e. OC Maps and Printing Section. In April he took on the examination of air photography, getting very good at photo-interpretation and working on the elimination of tilt distortion (pp. 54, 78). He also took panorama photographs and later did much artillery intelligence work (p. 53).

He devised the Romer in 1915 (p. 230) as I suggested, but his MC was awarded for his work over the period of the Battle of Loos, September to October 1915, when he produced a stream of special sheets, printed on hand-presses and brought continually up to date (p. 112).

Feeling unemployed in the new year, he applied for a transfer, and after a few days' leave in April 1916 he was posted to Ordnance Survey, Southampton – 'something of a rest cure' – until August (not December), when he went to assist Col. Hedley at GSGS in the War Office (p. 370). He had a variety of work, including organising supplies of equipment to the field survey units. As a GSO 3 he revisited France, 14-24 November 1917, to supervise a reallocation of equipment between field survey companies.

The first account of the Romer, then merely called a 'reference card' seems to be in a Maps GHQ booklet, *Maps and Artillery Boards*, published in December 1916. It illustrated

¹ R T Porter, 'Romer and his Romer', *Sheetlines* 63, 39 – 42.

² *The Times*, 24 March 1951, 1.

³ *The Cambridge University List of members up to 31 December 1982*, Cambridge University Press, 1983.

⁴ Peter Chasseaud, *Artillery's astrologers: A history of British survey & mapping on the Western Front 1914-1918*, Lewes: Mapbooks, 1999. Page references as cited; not all mentions of Romer are indexed. (For a review by Ian Mumford see *Sheetlines* 55, 35-36.)

⁵ Re Chasseaud's p. ix, Sir Lawrence Bragg et al., *Artillery survey in the First World War* (Field Survey Association, 1971) say, p. 43, that 'Lieut-Col. Keeling died shortly after the war from the effects of wounds received while serving with the Survey'.

two Romers which had been issued, one for 1:10,000 and 1:20,000 gridded maps, the other for use with the graticule on ungridded 1:100,000 maps (pp. 229-230). If Carrol Romer had any input into this booklet, the use of a generic description is understandable, but it does seem odd that it took until 1929 for the designation 'Romer' to appear in print. It must have survived in informal use for many years until, hallowed by time, it achieved permanence under the HMSO imprint; or was it a 1929 brain-wave of someone like the logophile McCaw?

Finally, I should mention that despite the immediate post-war reference to Aubengue as the second home of OBOS, most later studies (including Chasseaud) have Wimereux, presumably more likely to be found on atlas maps. On the modern 1:100,000 map Aubengue seems to be village a kilometre or more NE of the seaside town of Wimereux, but I have not researched the actual site of OBOS. The Duffy photographs in the OS Picture Collection include several showing the buildings.

Landranger 139 : Birmingham & Wolverhampton (Edition C2)

David Kimber

The map is an updated version of edition C1 and it was launched to coincide with a major promotion of the *Landranger* Series by the Ordnance Survey. A new cover has been adopted containing statues from Centenary Square, Birmingham. I would prefer a major topographical feature or a building. The first C edition showed Tamworth Castle and the C1 edition showed the Council House, Birmingham. As a resident of Wolverhampton, and as Wolverhampton was bestowed city status in 2000, I would like to have seen St. Peter's Church or similar landmark from the Wolverhampton area featured on the cover.

The Primary Road network of trunk roads and other major roads is now shown in green as opposed to magenta and follows on from the classification system used in the main road atlases. There always seemed an abundance of roads coloured magenta and the main road network below the motorway system is now more clearly shown. From a car driver's and navigation point of view, I think that it an improvement but I would have preferred a different colour to green.

The Midland Metro light rail system is now shown using a special symbol for light rapid transit. The errors in the earlier editions have been amended but I do not like the use of the mineral railway symbol. Why not use a solid line with a defined colour? The Midland Metro Light Rail System is a very important part of the passenger railway in the West Midlands area and I would have liked it to be more prominently shown.

With regard to the West Midlands railway network, I have a gripe with regard to the former freight-only line that served the Birch Coppice/Baddesley colliery systems of British Coal (previously known as the National Coal Board). During 2001 and early part of 2002, this line is being re-instated by Trackwork of Doncaster to serve a new distribution centre for Volkswagen sited on land formerly occupied by Birch Coppice Colliery. The line is expected to open to traffic in 2002 and from a forward planning point of view, why could it not have been shown as under construction or shown in full with and anticipated opening date? On the

roads front, the Birmingham Northern Relief Road is shown dotted and under construction, why not railways?

I was interested to see the 'park and ride' symbol being used. However, the symbol does not appear very prominent at Hawthorns station, given that the location is signed from the M5 Motorway. It would be interesting to know whether Centro, the West Midlands Passenger Transport Executive, were consulted as I am sure that they would have wanted several other stations to be denoted with the park and ride symbol, as well as some of the tram stops on the Midland Metro. I personally would like all railway stations to be labelled; you should not have to depend on nearby wording.

As to major roads, the big event in the area is the construction of the M6 Toll road previously known as the Birmingham Northern Relief Road. Most of the road is shown as under construction but the large junction with the M6 motorway around Shareshill is not shown.

I am glad to see that the Royal Hospital in Wolverhampton, that has been closed for three years, is not shown as such. It is interesting that the Molineux Football Ground in Wolverhampton is shown as a football ground, possibly because it also acts as a conference centre, but the football grounds at Bescot (Walsall FC), The Hawthorns (West Bromwich Albion FC) and St Andrews (Birmingham City FC) are not depicted as such. Aston Villa football ground is a major venue but it does not receive any special treatment.

The map is up to the standard of the *Landranger* Series but with regard to value for money, I reserve judgment given the price of £5.99 and creeping upwards. I am a collector of maps and I purchased a copy for my personal map collection of the West Midlands area. I still find the *Landranger* Series a good series for general mapping but many people I know make do with a road atlas and *Explorer* series maps. I hope that the *Landranger* series will continue, but with the development of Internet mapping websites and the increased use of aerial photography to show ground detail, the *Landranger* Series may be squeezed out.

Good news – but ...

'A new addition to the service of Active Communities Coordinator is the provision of 3 Global Positioning Systems, which instantly give the grid reference of any location, and if quoted when requiring any of the emergency services will locate your property to within 30 feet. This service will particularly benefit those properties in isolated locations but can be used by anyone. These systems have been purchased from an award received last year and seen to be of much benefit to our many rural locations within Devon & Cornwall. The units can be loaned to Neighbourhood Watch schemes to enable all properties within the scheme to obtain its own grid reference for use in the future.'

This piece appeared in the September 2001 Newsletter of the Devon & Cornwall Neighbourhood Watch Force Association. It is good to see that the National Grid is at last being appreciated as a useful tool. But GPS? Perhaps a set of *Landranger* maps of the area would have served just as well and at a much smaller cost.

Aidan de la Mare.

Third Edition coloured maps: help wanted

David Parsons

At a recent meeting of the publications subcommittee, it was agreed that the Society would bring back into publication the substance of Guy Messenger's cartobibliography of the England & Wales Third Edition (Large Sheet Series), which has now been out of print for some years. It would be completely different in format, and would follow the pattern of recent cartobibliographies of Richard Oliver and Roger Hellyer, which provide all the information on offer about each state in a single row, with general information in a heading, and any additional detail in footnotes. This would inevitably mean the removal of some of the classes of the information provided by Guy, and details of cover designs and topographical change are two categories that will no longer be listed.

It is intended that the same publication would also incorporate other coloured Third Editions, thus superseding Guy Messenger's other volume, on the Scottish Third Edition coloured map, and also Roger Hellyer's list of the small sheet series map of England and Wales in *Sheetlines* 57. The few Irish Third Edition coloured sheets would form the final section of the book. District, tourist, and military maps relevant to each section will be included.

Since the publication of Guy's volumes in 1988 and 1991 much new material has come to light, and while the committee is aware of some of this, it may well be that members have in their own collections issues that were not recorded by Guy in his booklets, or by Roger in his *Sheetlines* 57 list. Further, they may be able to offer corrections to detail in those publications. Much has been spotted, but other eyes may find more.

Now is the time to write in to Roger Hellyer, who has undertaken oversee the compilation of the new edition. Please contact him with corrections or additions to the earlier lists.

In the England and Wales Third Edition (Large Sheet Series) there were six states identified by Guy which he was unable to locate, of which four remain unrecorded. If anyone has found copies of

Sheet 5, published 1917, with NO reprint 12.21 code,
Sheet 13, CCR, prices 1/6, 2/-, 2/6,
Sheet 108, reprint 4.09,
Sheet 111, 4.09, ARRR, prices 1/6, 2/-, 2/6,

or in Scotland

Sheet 23, a 1912 reprint,
Sheet 29, prices 1/6, 2/-, 3/-
Sheet 29 and part of sheet 21, the 1908 original printing,
Sheet 31, reprint 4.08,
Sheet 32, reprint 3.09,
Sheet 57/57A, a 1910 reprint,

please do not keep this information to yourself!!

There were also several other states known to Guy only as single copies in private collections. We have no knowledge as to who these collectors were, but it would be most

helpful if they were prepared, in confidence, to identify themselves. So, if the owners of the England and Wales sheets (using Guy's codes) 9.1x.ii, 9.1y, 21.1z, 52.1u, 54.1u.i, 68.1u, 86.1u, 94.1u, 114.1x, 126.2z, 145.1x, Brighton (BRG.Oz), Pwllheli (PWL.Oy), Aldershot District Manoeuvre Map (ALD.O, ALD.1, ALD.2) would get in touch with Roger Hellyer, he would be most grateful. And if you are in possession of a printing that has so far gone unrecorded, please tell us about it.

Roger's address is: 60 Albany Road, Stratford upon Avon, Warwickshire CV37 6PQ (email roger.hellyer@ukgateway.net).

Bases of the Ordnance Survey: an addendum

Peter Haigh

I have recently had opportunity to examine the manner in which the Survey presented its bases on the *Old Series* one-inch sheets. They were surprisingly inconsistent, even for the opposite ends of the same base. Terminals were sometimes, but not always, marked with a circle with a dot at the centre. Details of the annotation on the England and Wales sheets are given below. In spite of its historic importance, the Hounslow Heath base was not marked on the *Old Series*.

Salisbury Plain 1794

On early printings of the *Old Series* sheets there is an annotation 'Gun End of Base' at Old Sarum and '☉ Gun End of Base' at Beacon Hill.¹

1849

On later printings of the sheets both the terminals have now been marked with triangulation points and the base has been marked by a medium weight pecked line annotated along its length with the 1849 measurement '*Length of Base line in feet = 36577·8581*'.² The addition is not noted as a changed feature in the Margary cartobibliography.³

Sedgemoor

The *Old Series* map is annotated '☉ End of Base' at Greylocks Fossway and '*End of Base*' at Lugshorn Corner.⁴

Misterton Carr

The *Old Series* sheet is annotated '☉ North End of Base' and '☉ South End of Base' at the respective points.⁵

¹ H Margary, *The Old Series Ordnance Survey maps of England and Wales*, Vol 3, sheet 14, *Devizes*, pp 23, 24.

² *Reprint of the first edition of the one-inch Ordnance Survey of England and Wales*, sheet 77, Newton Abbot: David and Charles.

³ Margary, Vol 3, xlix.

⁴ Margary, Vol 3, sheets 19 and 18, pp 17 and 33.

⁵ Margary, Vol 5, sheet 86, *Hull*, p7. David & Charles sheet 23.

The Salisbury Plain base on later editions of Old Series sheet 33, with the 1849 measurement added.

Ordnance Survey in 2001–2: a miscellany and a few opinions

Richard Oliver

Just before *Sheetlines* went to press, Ordnance Survey issued its report for the year ending 31 March 2002, and this offers a few snippets of information additional to those in the report of the House of Commons Select Committee noticed elsewhere in this issue of *Sheetlines*. A few other snippets emerge from less formal sources.

Turnover increased from £99.55 million in 2000-01 to £102.63 million in 2001-2; there was a profit of £8.1 million in 2000-01 and a loss of £7.56 million in 2001-2, but these must be seen in the light of investment of £19.47 million in 2000-01 and £35.33 million in 2001-02. A substantial element of investment costs was due to re-engineering data in the National Topographic Database, and creating OS *MasterMap*, which cost £17 million.¹ Total revenue must also be seen in the light of the contributions by the National Interest Mapping Services Agreement (NIMSA), which supplied £13.45 million in 2000-01 and £15.99 million in 2001-02, i.e. about 15 per cent. The target for revenue, excluding NIMSA, in 2001-02 was £85.6 million; actual revenue was £86.6 million, of which £8.8 million was contributed by paper mapping.² Those who are concerned about such matters can read at length the Comptroller and Auditor-General's qualifying of the accounts on the grounds that OS declines to set a monetary value on its topographic database.³ Sir John Bourn's suggestion of £50 million looks suspiciously like a compromise between a nominal value of £1 and the real value, estimated in terms of replacement cost at current prices and technologies, which is probably closer to £500 million. As such it may yet provide a 'political' way out for all parties.

An interesting aspect of OS activity is energy-saving. OS has become self-sufficient in its heat and electricity with a combined heat and power scheme, using an on-site gas-fired generator. By this means it can avoid the government's climate change levy. Some of the surplus power will be used to power one of OS's two electric cars.⁴ Such a holistic view is in some ways reminiscent, in effect if not in inspiration, of the extra-curricular activities notably espoused by Sir Henry James, Director-General 1854-75.

'At Ordnance Survey we are determined to put our customers first, because we appreciate just how important their needs are.'⁵ Vanessa Lawrence, the Director-General has repeatedly stressed the OS's ambition to be 'the content provider of choice'. So far, those of us seeking a really good 1:100,000 map of Britain have been unable to oblige OS with our custom: some background to this is provided by recent correspondence which I have had with OS.⁶ On 6 July last year a forum on cycling maps was held at OS: although about sixty organisations were invited, *seven* non-OS people actually attended, including myself and two representatives of the Cycling Tourists Club. As a result of this exercise, OS concluded that the needs of commuting cycling could be met by street maps, and those of off-road riders by a redesigned 1:25,000 *Explorer* series, on which work is due to begin in the spring of 2003.

¹ *OS annual report for 2001-2*, pp 8, 20. This is both published by HMSO, at £16.99, and is available on the OS website, where the pagination is preserved. Both potential purchasers and downloaders are warned that the equivalent of at least 16 of the 72 pages are either occupied by unnecessary colour illustrations, or are blank!!

² Report, pp 10, 24, 60.

³ Report, pp 50-54.

⁴ Report, pp 37, 40.

⁵ Report, p 28.

⁶ The following draws on letters from OS of 2 and 31 May, and personal experience.

This will be produced directly from the OS large-scale database, as will the 1:50,000 *Landranger* a year or so later, though at present there are no indications that the latter series is to be further redesigned. It is to be hoped that the problem of comparative lack of sharpness in the image, which is particularly troublesome on some 1:50,000 sheets, will thereby be solved. (What is at present unclear is what will happen to *ad hoc* small scales revision: perhaps OS are now so confident of the up-to-dateness of the *MasterMap* database that any extra revision can be dispensed with. If so, there ought to be a small saving in cost.) However, there are at present no plans for a 1:100,000 or 1:125,000 series: OS research suggests that a cycle-touring series would not be commercially viable, which is no great surprise, but a properly designed map at this scale would appeal far beyond cyclists. I have suggested that a 1:100,000 general-user series be produced which would be in double-sided form: on one side would be 'reluctant user' mapping, in the style of the numerous examples published since March 2000, and on the other side would be high quality mapping, for which models have lately been published in the *Cartographic Journal* both by David Forrest and Ewen Kinniment and by myself.⁷ Such a map might cover Great Britain in no more than 36 sheets. OS's response to that is that production costs for double-sided mapping are over 40 per cent higher than those for single-sided, and that that would increase the retail price where a 1:100,000 of this dual-nature sort would no longer be competitive with broadly similar offerings (presumably of the 'reluctant' variety) from commercial firms.

It is possible that a way out will be offered with the development of customised small-scale mapping of a sort which was first offered over a decade ago to large-scale customers with the OS *Superplan* service. A start of sorts has been made with the OS Select service, which was launched in mid April; at the time of writing (late July) it appears to be still only available to customers over the Web. This offers 1:50,000 *Landranger* mapping in sheets covering 40 × 40 km on the ground, with an integral cover which doubles as a title-panel, and legends in either English or Welsh. The real advantage over the conventional offering is that sheets can be site-centred. So far, so good; but the mapping derives from the rasterised version of the 1:50,000, with poor image quality, exemplified by a tendency for infills either to disintegrate into the prevailing primary colour (so that woodland appears distinctly yellow), or else nearly disappear (e.g. for buildings): this compares unfavourably with what can be done with modern colour photocopying of the conventional offering.⁸ This might not matter so much were not the ordering so convoluted and the price so high: £11.99 plus £2.50 postage and packing for a single sheet, with a very modest discount on larger orders.

As such, *at present* OS Select is not much more than a leaving-present gimmick. Perhaps deriving the base-mapping from the *MasterMap* data will enable a better product to be offered, with a modified colour-scheme to take account of output limitations. Still, everything has to begin somewhere, and this might yet be the beginning of a gradual abandonment of mass-production litho-printed mapping of the sort that has dominated OS small-scale publishing for a century, in favour of a gradual standardisation on customised print-on-demand mapping. Under such a regime, it ought to be possible to offer small-scale printouts from the *MasterMap* database designed to provide detail suitable respectively to

⁷ David Forrest and Ewen Kinniment, 'Experiments in the design of 1:100,000 scale topographic mapping for Great Britain', *Cartographic Journal*, 38 (1) (2001), 25-40, and Richard Oliver, 'Mapping for cycle touring in Britain: past, present and a possible future', *Cartographic Journal*, 38 (1) (2001), 48-60. For the OS angle on 'reluctant user' mapping see Paul Franklin, 'Maps for the reluctant', *Cartographic Journal*, 38 (1) (2001), 87-90.

⁸ Comments are based on an OS Select specimen obtained by the writer in late April 2002, and some experiments conducted under the University of Exeter's educational licence for research purposes.

1:25,000, 1:50,000, 1:100,000 and 1:250,000, which could be printed at larger or smaller scales according to taste, site-centred of course, at a variety of paper sizes, and offered in several styles, varying from a restrained use of colour reminiscent of OS practice in the later 1940s, to something which would make Las Vegas look like a puritan paradise. It would also be possible to offer some variations of content, which would enable conflicts of opinion on such matters as the depiction of administrative boundaries to be resolved.

With suitable accountancy (and quite a lot of OS's problems are accounting rather than geometrical or cartographic), it ought to be possible to avoid the messy situation which we have at present, whereby OS is suspicious of the effect of a good 1:100,000 on 1:50,000 sales, and can contemplate a yet further rearrangement of 1:25,000 sheet lines, apparently so as to reduce the internal competition of this scale with the 1:50,000. The 1:25,000 *Explorer* was created to increase sales at this scale: some of the double-sided sheets offer 1200 square kilometres of country for not much more than is asked for 1600 square kilometres at 1:50,000. This might perhaps be an argument for a good 1:100,000 as a complement to the 1:25,000. However, the rumour that OS is considering eliminating the double-sided sheets, if true, is probably less because of the persistent complaints from some of us about the inconvenience of reversing double-sided mapping in order to maintain continuity of cover, and more to do with propping up 1:50,000 sales. Something seems wrong somewhere.

In a paper to the Oxford Seminars on Cartography in November 2001, which has since been published, Vanessa Lawrence describes a digital future for OS, but says that paper mapping still has a place. Perhaps: but perhaps representatives of OS ought to be less defensive about paper mapping in its present form.⁹ OS Select is a digital product which is shackled by a paper past: we need paper maps which take account of the digital possibilities. Then OS really *will* be 'the content provider of choice'.

No more security deletions?

Some time ago the Editor noticed that aerial photography available at www.getmapping.com included sharp images of a number of defence establishments conventionally shown as fictitious rural fields on OS maps. It did not seem quite proper to mention this in *Sheetlines* at the time in case it was an awful mistake, although discreet enquiries suggested that permission had been obtained to publish the **whole** country as it was.

In May Mark Thomas presented a programme on Channel 4 about public access to confidential information. In the course of this, he queried Rear Admiral Nick Wilkinson, secretary of the Defence, Press and Broadcasting Committee, about the omission of Burghfield Royal Ordnance factory, and similar sites, from OS maps. Peter Haigh provides a cutting from the Sunday Times of 26 May that quotes the Admiral's response, "We first thought about this two years ago when we changed the D-notice system to allow aerial photographs of such places. We agreed at the same time that it was silly to keep these places off the maps. If it can be seen from the air or from the road, then it can be shown on a map".

It will be intriguing to see what does now reappear. Certainly, a cluster of buildings simply marked 'factory' may call less attention to itself than the current instances of railways ending in empty fields which just happen to have roads obviously diverted round them.

⁹ Vanessa Lawrence, 'Mapping out a digital future for Ordnance Survey', *Cartographic Journal* 39 (1) (2002), 77-80.

Hiking by the map – confusion that it breeds

*S P B Mais*¹

Bill Henwood, who has provided the notes, found this cutting being used as a bookmark in a second-hand travel book. It is undated, but from the reverse, appears to have been published in The Daily Telegraph on or about 31 August 1931, and thus refers to the Fifth Edition.

I am delighted by the news that the Ordnance Survey are about to publish a new series of one-inch maps, to be known as the Relief Edition. From my point of view it is aptly named, for it will certainly be a relief to know when I come to a hill whether I am expected by the map to climb up it or to roll down it.

I have just read a delightfully informative article in *The Daily Telegraph* telling me how to orientate or set my map. What the writer of the article failed to do was to tell me how to open my map in one of the jolly fifty-miles-an-hour breezes that characterise our English summer day, or how to prevent the map from being reduced to a pulp by the genial cloudburst which has fallen on any map opened out-of-doors on almost any day of this particular August, with a pressure of 35.7 tons per square centimetre.²

The idea of laying a compass over the magnetic north is delicious. It might be possible in vacuo or (possibly) in Monaco, but not in Truro, not with anything less weighty than a ship's compass, and certainly not on any map unless it is made of something more substantial than my waterproof sheet.³

Even if the elements permit of his opening it, I think it is a grave mistake for a hiker to be able to read a map accurately. When I was a boy I crossed the Welsh mountains in mid-winter without a companion, without a map, without a compass, and without asking my way. It never struck me that I could go wrong. I got no excitement out of it at all.

Now that I am an expert map reader (I almost got a medal for it during the war) I get a thrill out of crossing Windsor Great Park. With a map in my hand I can be, and have been, completely lost on Banstead Heath.⁴ What I take to be a clearly defined footpath almost invariably turns out to be the county boundary, but the farmer to whom I explain this quite excusable error seems strangely unable to notice the astonishing resemblance between these (what are curiously called) conventional signs. They are anything but conventional to me.

Another very unfair thing about maps is that they nearly always face north - well, you know what I mean. Now I hate facing north. I like the sun on my face, and even I know that the sun lies more or less to the south. The result is that if I want to find my way by the map I either have to walk backwards, a slow and tedious means of locomotion, which means that I get the sun (if any) on my neck (most dangerous, I'm told) and run the risk of being run down by cars on the road and by bulls in the fields, or if I walk forwards I have to remember that the church spire which ought to be on my right will really be on my left, and that the inn where I propose (among other things) to ask the way, will turn out to be on the other side of

¹ Stuart Petre Brodie Mais, 1885-1975, academic, broadcaster, journalist, novelist, and author of many books on travel and the countryside.

² The summer of 1931 was a poor one across England and Wales – mainly dull and cool, and particularly wet. (Information from Ian MacGregor, Archives Information Manager, National Meteorological Archive, Meteorological Office, Bracknell).

³ Might this have been on Place's Waterproof Paper, which was introduced in 1930?

⁴ At TQ 2354, between Epsom and Reigate in Surrey.

the river, and there is no bridge available for miles. I hate having to spend the day calling my left hand my right.

To get the full romance out of hiking I have noticed that you must equip yourself as if for a trans-Siberian trek, and carry a much heavier pack than any soldier ever carried in France. But it is difficult to find any walk in England where you will have to rely on your own rations for over a week. Unless, that is, you walk with a map.

In that case, so long as you are endowed with my powers for misreading the signs, you may wander not for weeks, but for years, without meeting a fellow-creature or entering a pub. If ever I want to feel like Robinson Crusoe, all I have to do is use my map to find my way through Burnham Beeches.

So if it's excitement you want, never travel without a map. It's the easiest way to get lost I know.



The editorial office c.1890

This extract comes from sheet 17 of *Cruchley's Reduced Ordnance Map of England and Wales*, a serendipitous purchase at the AGM map market. As Richard Oliver has pointed out,¹ this half-inch map is derived from plates engraved by G & J Cary between 1820 and c. 1830; this copy is a Gall and Inglis issue of, judging by the railways, around 1890.

Although the railways have been updated, little else has.² Penarth is still shown as a rural hamlet. Its population in 1801 was 326, in 68 households.³ With the opening of Penarth docks in 1865 more housing was needed and by 1890 Penarth was a bustling town of around 13,000 inhabitants – though you wouldn't know it from Cruchley's map.

Compare with the contemporaneous extract from Alan Godfrey's reprint, *Cardiff & District 1890*, taken from Ordnance Survey New Series one-inch sheet 263. – CJH.



¹ 'The Rivals', *Sheetlines* 49, 27.

² The Taff never did flow east of 'Cardiff Station'. Its course was straightened to the west before the railway arrived.

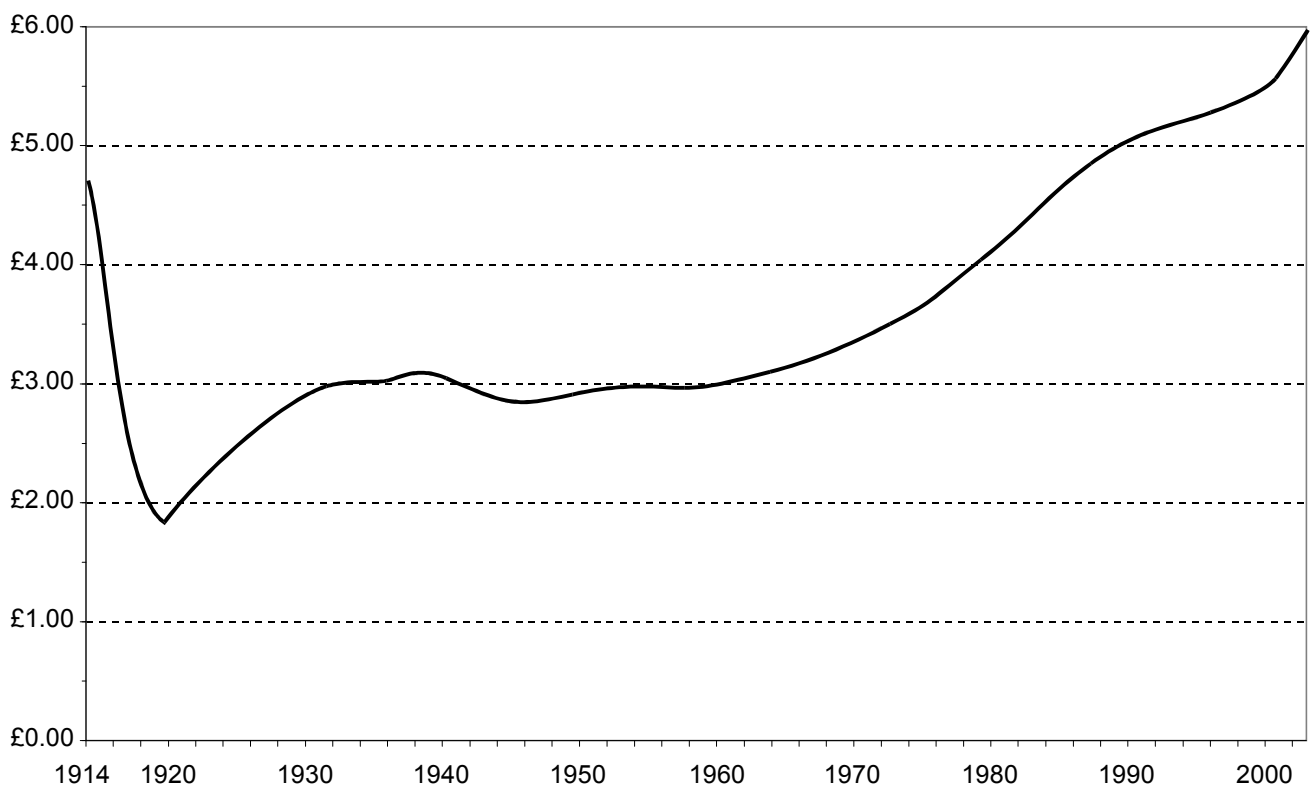
³ Roy Thorne, *Penarth, – A History*, Risca: Starling Press, 1975.

The real cost of a map

Chris Higley

In his two articles in this issue Richard Oliver points out the small proportion of Ordnance Survey revenue now derived from conventional paper maps. However, to most of us, the one-inch map and its successor, the 1:50,000 *Landranger*, are still the quintessential OS product. Faced with a rack of Landrangers at the current recommended price of £5.99, one remembers nostalgically the days when 1:50,000 maps seemed expensive at £1.15 – but then in my collection I also have a pristine one-inch cloth mounted map of 1930, marked ‘Popular Edition Price 2/6 Net’.

By using a long term cost of living index¹ it becomes possible to get some idea of how these prices compare in real terms. The graph below is a rough and ready attempt to show how the retail cost of a paper folded one-inch or 1:50,000 Ordnance Survey map has varied through the years when expressed in terms of 2002 prices.



The figures should be treated with extreme caution! Knowing that I had two pages of *Sheetlines* to fill and a deadline to meet, I have not been able to track the exact date of every change of cover price and have taken no account of differing sheet sizes. Also, the long term cost of living index is an imperfect tool, made up by ‘gluing together’ the current Retail Price Index with a number of earlier, but not entirely comparable, indices to give a composite series of values going back to 1914. Because some raw data points are suspect, the results are

¹ See, for example, *Whitaker's Almanack*.

presented as a smoothed curve to show overall trends rather than speciously exact individual price points.

Although collectors most commonly find pre-war maps on cloth, I have looked at the cost of paper folded maps throughout. We start in 1914 with a Third Edition one-inch map costing 1/6 – say £4.70 in today's prices. The Ordnance Survey effectively ignores the severe inflation caused by the First War, and the real cost of a map falls. A Popular sheet when first introduced in 1919 cost 1/–, rising to 1/6 in 1920,² i.e. going from £1.30 to £1.90 in 2002 terms. The cover price remained constant during most of the 1920s and 1930s, but the real cost rises as depression forces the cost of living index down again.

The graph suggests that the real cost of a map hovers around the £3 mark from the 1920s until about 1970. My raw data indicates rather more variation than the smoothed curve on the printed graph, but still shows that the real cost of a one-inch map did not stray outside the range of £2.20 to £3.90 for over fifty years from 1921.

In the 1960s cover prices rise sharply as inflation soars. However the graph shows that from the early 1970s these increases also mask a continual rise in the real cost as the policy of 'full cost recovery' bites. Our comparisons are now on firmer ground; we are dealing with the 1:50,000 series throughout and have inflation figures based on the current RPI. In 1977 I was buying maps at £1.15 each, still only £4.40 at today's prices; by late 1992 the cover price had risen to £4.25, equivalent to £5.38 today – now, ten years later, we have an actual price of £5.99 for a *Landranger*.

Although historically high, today's cover prices are probably not too far out of line with those of commercial competitors or overseas mapping agencies, though it is interesting that OS is selling the equivalent 1:50,000 maps produced by the Irish Surveys at just over one pound cheaper than its own products. However, with essentially free mapping now so available on the Internet, can OS protect their sales if they maintain their current prices? It is probably a pipe dream, but would a return to a £3.00 to £3.50 price level generate sufficient extra sales to preserve, or even increase, their overall revenue? The rate at which the stock of superseded *Outdoor Leisure* maps recently disappeared from branches of The Works and similar bookshops when priced at £2.00 per sheet certainly demonstrates a huge demand for good quality mapping at the right price.

My first Ordnance Survey Map

Bill Batchelor

It was interesting to read in David Archer's 'Kerry Musings', *Sheetlines* 63, that the map he would most likely choose to be buried in a time capsule was One-inch Seventh Series sheet 154, *Cardiff*. This also happens to be the first Ordnance Survey map I ever owned. My mother came from the Rhondda Fach, and I visited the area many times. In my early teens I

² Yolande Hodson, *Popular Maps*, The Charles Close Society, 1999, 200.

used to spend the whole of the six weeks summer school holidays there, staying with my aunt and uncle who ran a small newsagent's shop. I have always loved the area; it was a complete contrast to my home surroundings in Hertfordshire. The view from my home in Harpenden was pleasant, across the Lea Valley to the fields and trees and the rolling hills beyond, whereas in the Rhondda the view from the garden was of steep bracken and rock strewn slopes, reaching up almost thousand feet, seemingly blocking out the sky. The river also was different to the River Lea that we used to play in, the river Rhondda Fach had rocks in it, so it was noisier, also it didn't have mud in it, instead, it had black shiny coal dust (easily washed off in the river water if (when) you got too dirty!)

Stay with me, the map bit will come. After helping my uncle deliver the newspapers in the morning I had the day free, so I used to go 'up the mountain' and explore the old sandstone quarries and coal tips looking for fossils and minerals. This is where the first 'M' love of my life started – *Mountains*. From up the 'mountain' you could look down into the valley and watch tiny buses driving along their routes, and see the steam trains from the collieries wending their way out of the valley to the world beyond. Over time my explorations gradually took me higher to the tops of these hills, until I reached fantastic view points where I could see south across the Vale of Glamorgan, and the shining Bristol Channel to Exmoor in the far, far, distance. Wow, what a site for a young Hertfordshire boy.

At some time during later visits I acquired a map that showed me the form of the valleys and mountains of this area, it was *Bartholomew's Revised "Half-inch" contoured map of Great Britain, sheet 12 'South Wales'*, dated Oct 1952 (in front of me as I write this). I was fascinated by the way the layer colouring showed me the shape of the land, almost like a three dimensional model. Some time afterwards, I was with my mum, in a booksellers in Luton that had lots of maps for sale, some of them published by a firm called 'Ordnance Survey', and they were of a larger scale than that with which I was familiar with, one-inch to one mile – oh, now these *are* different. I found the map that covered the Rhondda Valley, sheet 154. I opened it up, and looked, and looked, and have been looking at these Ordnance Survey things ever since. That was the start of the second 'M' love of my life – *Maps*.

The detail on the map was tremendous, every road and railway, coal tips on the mountains with the tramways leading up to them, and most of all, lots of squiggly contours that gave me an even clearer view of the shape of the land. The colouring was just right, the grey for built-up areas, red and brown roads following the valley bottoms or zigzagging over the mountains, green for the forests with the conifer tree symbol, (a lot more of those on the map nowadays) and the brown contours, dark enough so that you could see them. I spent hours exploring it. I still have that map, Ordnance Survey One-inch to one mile Seventh Series, sheet 154, (print code 4007) 1952, price mounted and folded 6/6. It is grubby, 'Sellotaped' down the folds, has lost its cover, but is kept in a sealed plastic bag with 'WRB's FIRST ORDNANCE SURVEY MAP' written on it. For those of you who have sheet 154, put yourself at grid ref. ST 015928 and *imagine* the view, northwards – valleys and hills, south – forever!

Note – the third 'M' love of my life is my wife *Madelaine*, who does my grammar checking.

Was there life before maps? – 2

Aidan de la Mare

I really can't remember a time when I did not know that there were maps in the big drawer in the bureau at my parents' home. There were a few of those little maps folded into rather grubby white covers, but they seemed rather primitive and showed a landscape that was remote in time. There were some of those richly decorated red covers with a man sitting on a hill overlooking a romantic landscape, and there were quite a few of those blue covered Bartholomew's that no-one ever looked at. But the pride of them all were the bright modern looking maps with their ingenious method of folding by which it was possible to open them at any place without spreading the whole thing out first.

I do not recall having any instruction in using them; I just gradually learned that I could follow a line on the map that was also the line of the road we went along in the car. As it happens the *New Popular* started life one year before I did, but as we both spent the first years of our lives in intellectual abeyance, I was just able to recognize their newness when they began to appear in the house at the time the car was put back on to the road after it too had hibernated during the war. When I came to look at them they seemed a big advance on the earlier styles, and I felt that here was a view of the landscape as it actually was – right up to date (how naive can one be?).

In due course I graduated from following the course of a journey on the map to suggesting the route that might be taken. Thus over the years my tolerant parents were directed along many of the tiny lanes of the Sussex Weald in the course of weekend drives in the car. Who could resist the romance of Thunderfield Castle (even if the reality was a shanty house amid chicken runs surrounded by muddy ditches), or Great Wildgoose Wood, or the evocatively named ruin of Brambletye House?

Real understanding came however rather later when I was a reasonably willing member of the compulsory school cadet force. It was there that I was imprinted with the mysteries of the Grid on those flimsy paper flat maps with their fierce purple overprint (the access land 'purple plague' had its fore-runner). But the real triumph came when I was promoted to the dizzy rank of lance corporal. After a rather lack lustre performance in the exam, I was able, with the help of the map, to suggest to the examiner how he could best to get to his next appointment, indicating certain hazards on the way. I am convinced that it was only that chance that got me the promotion; it was perhaps unfortunate that my brief career with that rank did not really justify his confidence, with the possible exception of the map reading classes, that is.

Thereafter maps were just a very useful tool for finding my way around the country, either by road or footpath (much helped by the rights of way that began to appear on the Seventh Series). They also continued to provide armchair rambles across parts of the country not easily accessible and without offending the landowners. Then many years later came the discovery of the existence of the Charles Close Society – and after that – obsession!

Kerry musings

David Archer

When asked to give a talk on maps to the newly formed Kerry Local History Group, I agreed at once, without considering what it involved. After all, I have given a couple of short talks to our members, so it seemed no trouble. Six weeks later, things appear different.

I know almost nothing about “antique” or county maps, on which hills are shown as pimples, so this will have to come from a book. Or should I just begin by saying that I only know about Ordnance Survey maps? I will assume that the audience knows virtually nothing about maps, sitting around the saloon bar of the Kerry Lamb. Ah, snag one. A talk on maps to such a group must have illustrations, preferably the actual maps, but I will not have copies of all that I mention, and certainly not in multiples. Neither do I have slides, but I might be able to borrow an overhead projector. That will need transparencies being made, or failing that, simple black and white handouts. Lots of them. All at once everything takes on a much greater dimension. This is going to be hard work. And I can see that at the end of it I will frustrate and disappoint a lot of people who will want to buy copies of things I mention. Things which I might be lucky enough to dig out a single copy of.

The obvious answer is to invite Robert Davies from the National Library of Wales to speak. He can bring plenty of examples and will be sure to have illustrations on a laptop computer that projects onto a screen and a pointer that shines a light onto the picture. At the end he can invite everyone to visit the Map Department to look at the examples and many other maps, any time they wish. No, that’s unfair. Robert must have given dozens of such talks, so I will just have to do it myself.

I could begin by saying that I will only talk about OS maps and then give a brief run through covering Mudge, how the Old Series took forever to complete, the start of the large scales, and the first coloured one-inch maps. For dessert, they can have the National Grid and post-war large-scale maps, ending with the wonders of computers. A talk on OS maps in general would mean that I could include the wonderfully detailed town plans at 1:500, which all local historians should know about, but which do not exist for Kerry, as it is a village. I could show one for Newtown, but what’s the point of whetting their appetites with things they cannot have for their chosen area of study?

The answer is to discuss what OS maps can offer those researching the history of Kerry parish, to show what maps exist for Kerry and what they do or do not show. The changing paper landscape. But in such a rural area, very little changes. The only exception hereabouts would be the famous Kerry tramway, which managed never to appear on an Ordnance Survey map, despite being in existence twice. This is quite a good example of the “snapshot” element in maps of any sort. They only show what the surveyor saw on the day.

The Kerry tramway was a 2ft narrow gauge light railway that was used to get felled oaks and sawn timber from the hills to the GWR main line station a couple of miles away at Glanmule. It was in existence from 1887 to 1895 when the track was lifted, and was rebuilt in 1917 by German prisoners of war. Thus, it missed the first large-scale survey that ended in 1887. On the Second Edition of the 1:2500, (resulting from the revision of 1900-01) one can see wide white lines through the woods, indicating where the tramway had been, but no line is shown in situ. Is this a good idea? Would my audience appreciate the wonders of old maps

if I used a local example that shows the OS to have twice missed an important part of our history? Probably not.

What about the illustrations? Keep it low-tech. Black and white photocopies of Old Series and large-scales should be fine. I will photocopy any bits of coloured local maps that illustrate a point, on the assumption that even a black and white copy will be of interest to someone who has never seen an old map of the local area. The main problem will be locating originals to copy. I cannot produce my own collection of local maps, as I do not collect them systematically. I have a small cardboard box into which I drop folded maps, if I remember, but this was only started about five years ago. I also have a drawer that contains most of the twenty-five inch scale maps of Kerry parish, and another drawer containing a lot of the rest of Montgomeryshire. Local six-inch maps have never come my way, so perhaps I should get photocopies, as these really must be shown.

Even as I write, I can hear warning bells and see pitfalls ahead. If I draw up a list of all the maps that Kerry appears on I will then have no excuse for not trying to collect everything on the list. This will lead to collecting every state of every edition, which in turn will open up the collecting of non-Ordnance Survey maps. Speeds and Blaeus are really not my cup of tea, except for some of the colouring, but I have a vague memory of starting to collect local Bartholomew and Michelin maps, if I could find them.

The best thing would be to move to Bournemouth and give a talk there. The early printings of Old Series sheet sixteen show absolutely nothing except roughish looking land crossed by a piddling little stream and the words 'Bourne Mouth' trailing into the sea from where this town now stands. Not a single house. This would surely impress anyone. Starting with nothing, one could just show edition after edition with an ever-expanding urban area. This sounds both easy and fun, and Robert Davies could handle Kerry, I'm sure.

A Paper Landscape reissued

J H Andrews, *A paper landscape : the Ordnance Survey in nineteenth-century Ireland*, Four Courts Press, 2002. ISBN 1 85182 664 5 £19.95.

Whilst in print, the first edition of *A Paper Landscape* was always considered expensive and only a few of our members bought a copy. Long out of print, much referred to and praised, its position is similar to the original Irish six-inch county maps, everyone has heard how wonderful it is, yet few have seen it. Now, it is again available and this time, affordable.

I first read this book about twenty five years ago as it was the only monograph on Ordnance Survey maps, other than J B Harley and C W Phillips' *The Historian's Guide to Ordnance Survey Maps*, which was an entirely different sort of publication. It made a tremendous impression on me. Through his writing, John Andrews gave the impression of having read every scrap of paper that existed concerning the Ordnance Survey in Ireland. Not only this, but he seemed to have been able to sort everything out in his head and arrange it all chronologically. He had a full grasp of what was happening concurrently in different offices and in various people's minds, much like films where the screen is split, simultaneously showing what is happening in three places. Fully in control of his material, he then wrote about it in a wonderful narrative, compelling me to read and read, just to see what happened in the end. Rather than about maps, the thing I learnt most in reading *A Paper Landscape* was

that complex goings-on and the presentation of material could be presented in a clear and easily accessible literary style. Obscure vocabulary and complicated sentences are not needed to convey complex details.

Like W A Seymour's *A History of the Ordnance Survey*, this is a book about an organisation that makes maps, but it will be of little use in identifying a map in hand. The period covered is the nineteenth-century and so for the early part it is tremendously useful to the student of the OS on the mainland. A lot of ideas were first tried out in Ireland, and a lot of the major figures in Ordnance Survey history play an important part in this narrative. Even if a member purports only to be interested in the one-inch Seventh Series, he is still interested in maps and being so will be interested in this book.

The introduction to this new edition is in effect a review of the writings on the Ordnance Survey in Ireland since 1975, much of which has been by our members and much published in *Sheetlines*. Should you not have bookshelf space for your own copy, request it from the public library, with the possibility that others might come across it and they too will be able to enjoy a thoroughly good read.

David Archer

Ordnancemaps topics

Peter Stubbs

Here is a summary of some topics covered in the *ordnancemaps* discussion group over the past months. Members may wish to check out past emails to the group in the *ordnancemaps* archive at <http://www.yahogroups.com/group/ordnancemaps>.¹

Desert Island luxury

Alan Bowring pointed out that on Sunday 7 April Fiona Reynolds, director of the National Trust was interviewed by Sue Lawley on Radio 4's *Desert Island Discs*. She chose as her luxury to accompany her to this spot, a complete set of Ordnance Survey maps – it wasn't clear if she was referring to the *Landranger* series but she could have had in mind the *Explorers*.

Also, her book, apart from the Bible and the complete works of Shakespeare, would be *The Making of the Landscape*, by W G Hoskins

Why does Wantage move?

Two interesting questions appeared from the USA about County boundaries. The first was raised by John Farrel from Texas and forwarded to the list by Al Margary.

In a letter of 1896 Thomas Hardy refers to the town of Wantage as located in Berkshire, whereas it is now identified as located in Oxfordshire. I know that some re-drawing of county boundaries occurred in the early twentieth century. Can anyone tell me if the boundary between Berkshire and was affected? Or suggest a source describing why and when the northern boundary of Berkshire was altered?

¹ Keen-eyed readers will see that this full stop is *not* in italics, i.e. it marks the end of the sentence and is not part of the Internet URL. I have decided to give up the struggle to rearrange sentences so as to avoid this ambiguity! – CJH.

Bill Batchelor replied:

The Civil Parish of Wantage was transferred from Berkshire to the county of Oxfordshire 1st April 1974, along with dozens of other parishes.

The northern boundary of the county the used to follow the line of the River Thames or River Isis, then someone who didn't seem to like Berkshire got rid of almost half the county in one sweep. The new boundary ran roughly from Streatley on the R. Thames in the east, over the hills of the Berkshire Downs to just above Lambourne in the west. Until a few minutes ago I hadn't realised how much of poor old Berkshire got the chop in 1974, but now that I have consulted various maps and the book mentioned below² I can see what happened. If you look at the current administrative map of the UK you will see that there is even less of Berkshire, and that known as West Berkshire.

Detached portions of counties

Another Question about county boundaries was from Robert D Storch of University of Wisconsin Colleges,

For a recent book I co-authored I used the very interesting and beautiful *The County Maps of Old England* by Thomas Moule, which of course shows the boundaries as they were in the early 19th century. Very useful for indicating the detached portions of counties of which, of course, there were many. But most of them were located, as one would expect, within a reasonable distance of the "mother" county.

However, Moule shows very remote parts of Northumberland, a few of the them right on the Tweed or on the North Sea coast just below the Tweed, as being, as he put it, "Parts of the County of Durham locally situate in Northumberland". My initial reaction was one of disbelief, but Moule was a reliable guy so I guess one must believe him.

Does any learned soul out there know why places as far north in Northumberland as Cheswick or Norham (as well as Bedlington further south) were once part of County Durham? It's a mystery to me.

A reply came from John Griffiths:

These areas formed part of the County Palatinate of Durham until 1844 and were known as 'Norhamshire', 'Islandshire' (including Holy Island) and 'Bedlingtonshire' (this last preserved as the name of the oddest looking dog imaginable, the Bedlingtonshire Terrier, which looks a bit like a sheep). I believe part of the reason for this odd arrangement was defence: Norhamshire centred on Norham, the site of Norham Castle, one of the most important border fortresses, which was held and garrisoned by the Prince-Bishops of Durham, who held autonomous, quasi-regal powers within their domains.

Another contribution pointed out that orphaned counties occurred in other places as well. As recently as 1974 the northern piece of Worcestershire containing the town of Dudley was entirely surrounded by Staffordshire. There is a section on these Boundary changes at <http://homepages.nildram.co.uk/~jimella/counties.htm>.

Is there Manual of Map Reading and Land Navigation replacement?

Does anybody know if there is a replacement for the 1988 HMSO/Ministry of Defence *Manual of Map Reading and Land Navigation*? If there is where you can buy a copy? There ought to be a map reading manual that mentions the use of GPS and mapping.

² Royal Historical Society Guide and Handbooks, Number 10 – 'Guide to the Local Administrative units of England' Vol. 1 Southern England. 1979 edition, ISBN 0 901050 67 9.

Letters

Grid References

A query is raised on page 54 of *Sheetlines* 63, which makes me wonder if I have been getting grid references wrong all these years. It refers to rounding up or down, and says that no conclusion was reached.

I suggest that if we start from first principles, the answer is clear. A GR does not identify a point, more or less exactly; it identifies a square of ground. The precision of the result depends on the size of the square, which is fixed by the number of digits in the reference, and anything within that square has the same grid reference. Incidentally, I much prefer the word ‘precision’ for the ‘margin of error’ or what an engineer would call the ‘tolerance’. Accuracy as used in the discussion on page 54 is not the same thing, as you can have a twelve-figure GR which is very precise, but not necessarily accurate at all.

One factor which does lead to confusion is the placing of the figures on a Romer as usually drawn. The one shown on page 41 of the same issue illustrates this, with figures in line with the division lines, whereas it would be more helpful if they were placed between the lines.

In brief, then, to reduce a longer GR to a six figure one, simply remove the extra numbers. Never round up, or you will turn an accurate GR into one that is too far east or north by one division at the new scale.

Tim Stevens

Peter Lawrence is surely right in choosing the figure on the Romer that is closer to the point, for the instructions on OS and other maps say, for example, “*Estimate tenths from the grid lines to the point*” (my italics), and Peter Lawrence’s first rule necessarily follows.

However, when the point appears to fall exactly mid-way between two divisions, I would suggest using the **even** division, on the same principle that one ‘rounds even’, 52,001.5 and 52,002.5m E thus both becoming 52,002m E. This is the usual rule, advocated, for example, in David Clark, *Plane and geodetic surveying for engineers*¹. It was the principle used in the Computing Section at the Directorate of Overseas Surveys.

Richard T Porter

The instructions for giving a grid reference on Ordnance Survey maps have varied and have not always been entirely clear, and consequently there has often been confusion about the correct procedure. Having consulted various sources I have no doubt that the right answer to the question is to ‘round down’ to the nearest tenth below, at least when using a Romer or a ruler, although the procedure when making estimates by eye is rather less clear.

The clearest discussion I have seen of the question is in J B Harley’s *Ordnance Survey Maps: a Descriptive Manual*² and starts by drawing a distinction between the National Grid reference of a point and its rectangular co-ordinates, which are also derived from the National Grid. The rectangular co-ordinates of a point, which are used ‘for calculations, rather than for reference purposes’, are simply the distances of the point east and north of the

¹ Vol. 1, fourth edition (1946) 253; sixth edition (1972) 196.

² Ordnance Survey, 1975, 24-27.

origin of the National Grid. They are normally expressed in metres and rounded up or down to the **nearest** metre in the usual way. The purpose of a National Grid reference, on the other hand, is to enable a map-user to find a point on a map by specifying the grid square of a given size (e.g. 100m square) in which the point lies. The vital point is that this square is specified by giving the co-ordinates of its **south-west corner**. This is the reason for the rounding-down rule. It follows that the figures in the 100m National Grid reference of a point will be less than its rectangular co-ordinates by between 0 and 100 metres.

Harley gives as an example a point P whose National Grid rectangular co-ordinates are 538932 East and 177061 North. The 100-metre National Grid reference is given as TQ389770, where TQ denotes the 100 km square, replacing the first digits of the co-ordinates. The important point for our purpose is that the Northing 77061 has been rounded down to 770, although it is nearer to 771.

The advice to round down the 100m figure appears to be inconsistent with the instructions on, for example, the current 1:50,000 maps, in a note headed 'How to give a National Grid reference to nearest [sic] 100 metres'. First the letters which identify the 100 km grid square are to be read from the map. The instructions for giving the eastings then follow: 'Locate first VERTICAL grid line to LEFT of point and read LARGE figures [km] labelling the line... Estimate tenths [100m] from grid line to point.'

There is nothing here about rounding up or down, and the instruction 'Estimate tenths' clearly implies rounding to the nearest 100m. The advice is presumably meant for map-users doing the estimating by eye, and not using a Romer. When the tenths have to be imagined the idea of rounding down certainly seems harder than rounding to the nearest tenth (quite apart from the difficulty of describing the process). The size of the object being referenced and the degree of accuracy required by users may also be relevant.

The Ministry of Defence *Manual of Map Reading and Land Navigation*³ has some relevant comments under the heading 'Precision of Grid References':

Using the method of estimation by eye of tenths of a grid square the order of precision that can be expected is about plus or minus one tenth of a grid square unit. At a scale of 1:50,000, with 1000 metre grid squares a grid reference may be given to the equivalent of ± 100 metres on the ground.

If greater precision is required a Romer must be used to measure tenths within the grid square... The expected precision would then be in the order of ± 50 metres. It should be noted however that the Romer must not be used to interpolate a fourth significant figure in the eastings and northings value as this would represent 10 metres on the ground thus giving a spurious impression of accuracy.⁴

By way of contrast, a single red and yellow sheet (undated) issued by the OS a few years ago, labelled L 101 and titled 'Using the national grid...' says a grid reference can be 'useful to locate a meeting place'. It shows a very laid-back character with spiky hair saying 'All you do is guess how many tenths away from the grid your point falls. Half way to the next grid is five tenths – and so on.' A useful reminder, perhaps, that for most practical purposes it may not matter very much which way the grid reference is rounded. I seem to remember that they usually worked for finding Youth Hostels, although they weren't always quite accurate.

Finally, a small puzzle. As mentioned above, J B Harley used as an example in his book a point P with rectangular co-ordinates 538932 East and 177061 North. This is the same point P as in the instructions on the use of the National Grid given on the inside of the cover

³ Second Edition, 1989, page 18-3.

⁴ I am grateful to Peter Stubbs for pointing out this passage.

of the New Popular one-inch maps. It appears to be on or very close to the Greenwich Meridian (longitude 0 degrees), and a little to the south of the Old Greenwich Observatory. However, in the booklets *A Description of Ordnance Survey Large Scale Plans* (1947) and *A Description of Ordnance Survey Medium Scale Maps* (1949), the point P used for the same purpose has moved 10 km further east, its eastings now being 548932. Does anyone know why the original point was chosen and why it was changed?

Michael Holroyd

A long running soap story

The map Hugh Brooks has is one that fascinates Roger Hellyer by its print code. Actually, Hugh has missed a couple of codes out: W.O.8.23. Reprint 2000/24. 5000/24. 5000/26. 7500/27. 1000/28. 5000/28. 3400/29. 5500/29. 1100/29. 1000/30. 1500/31. 17900/31. 2000/31. 1000/31. 1000/32. 500/32. 200/33.

The only snag is with 17900/31. My copy of the print code is pasted on the inside cover in two parts. The top part ends ‘...1500/31. 1790’ with just a hint of two capital letters in the box above. The second part of the codes must be cut from a different sheet and includes all of the capital letters above and starts ‘00/31. 2000/31...’ So, were the codes 1500/31. 1790? ?00/31. 2000/31. etc.?

David Archer

Roger Hellyer himself comments:

My vote goes definitely for 17,900/31, since I possess that very printing of the map, though for some reason several of the earlier print codes as revealed on the 1933 printing are lacking. The print code on this, apparently one of four printings in 1931, runs: 2000/24. 5000/24. 5000/26. 7500/27. 17,900/31.

The 1933 printing, with, I think, no fewer than eighteen print codes, holds the record in my experience for that arcane aspect of OS history, though I suspect there may be a six inch sheet or two that rival it! The Aldershot Command sheet was, of course, in continual use by the army in the Aldershot area, and especially in the Staff College. Two different printings appeared in A H C Kearsley’s *Tactical schemes*, in editions published in Aldershot between 1930 and 1934, and other printings also appeared in the report of at least one War Office Exercise (No 2 of 1929, report in PRO WO 279/66). The large number of reprints, I would think, simply reflected a constant demand, updated each year as the War Office requirement for the map became predictable, rather than under estimates. Several of the shorter print runs were done, I think, for special purposes such as inclusion in Kearsley’s book mentioned above.

As to waterproofing, the other question posed by Hugh Brookes, waterproofing was indeed common on maps in GSGS 3907 and 3908 (and 3917 and the quarter-inch 3950), in the late 1920s to mid-1930s. Their presence is very common in some of the larger collections and it would not surprise me if one day it could be proved that all sheets in these series were issued at some time on such paper – indeed even that some printings were only printed on waterproof paper. The problem is that printings of some sheets during the relevant years have proved extremely hard to find in any form. I suspect therefore that without documentary evidence it will prove impossible to prove (or disprove) this hypothesis.

Bartholomew's one-inch and other mapping

May I add some glosses to Richard Oliver's useful comments on the Bartholomew one-inch and other scales (*Ordnancemaps* discussion group topics, *Sheetlines* 63)?

London one-inch. Bartholomew manufactured maps for others to publish before they started to publish themselves, in 1889. They provided W H Smith with a *Railway station map of London and its environs* from at least 1884. For W H Smith there was also *Environs of London*, a map with more topographical detail, with or without hachuring. Then in 1909, there was a fine layered map, *Environs of London*, for Bartholomew themselves.

A tip: the first (1935) editions of *South* (and *North*) *London roads and countryside* can be identified readily by the words "Jubilee Year Edition" on the covers. This was the 1909 map, updated and with extended sheet lines to cover a wider area.

Lake District one inch. The earliest printings of the two-sheet map found, both of them layered and folded in covers, are *Environs of Windermere Coniston &c* (1881), and *Environs of Keswick, Buttermere, Patterdale & Grasmere* (1883), both for W H Smith. The first, with extended sheet lines, changed its name to *Windermere & Morecambe Bay* in 1902 or earlier. The second retained its original map title, but grew in map area over successive editions. After 1890, these maps were also sold in Bartholomew's own covers.

The single-sheet *Bartholomew's one inch map of the Lake District* to which Richard Oliver refers has been seen with an A27 publication date and an old-style Bartholomew cover, sold by a Grasmere retailer with a stick-on cover label reading 'Grasmere and District'. No doubt other labels were available. First (A34) printings of the map with the blue 'lakescape' cover can be recognised by the words 'For pedestrians' below the cover title.

Isle of Wight one-inch. The earliest known printing is 1879, for W H Smith.

Pentland Hills. This map seems to have been first issued before 1911, since states have been found without a date code; and one is known to the writer with the date code A27. It appears to have been published first with the title *Pedestrian's map of the Pentland Hills*, on a scale of 1½ in/mile, and then on the slightly smaller scale of 1¼ in/mile, but showing a much larger area, as *Pedestrian's map of Edinburgh district and Pentland Hills*. The third and latest version seen reverts to the 1½ in/mile scale, and shows further, minor changes to the map area and title.

Aldershot two-inch. The layered map *Aldershot Camp & environs* was first published in 1881, perhaps for W H Smith, who certainly ordered later printings.

Tim Nicholson

Following up another query in the same article, Rodney Leary used the World Wide Web 'Google' search engine to find an extract from the Irish Times⁵ confirming Richard Oliver's definition of a 'foot stick' or 'footstick':

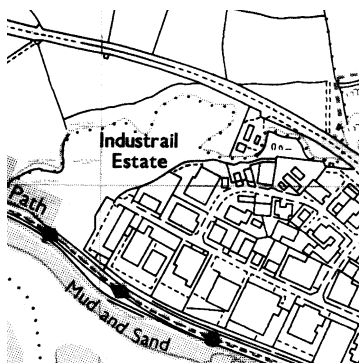
A century ago, the naturalist Robert Lloyd Praeger walked across -country through most of Ireland, cataloguing plants and where they grew. "There is little," he could say in *The Way That I Went* (1937), "especially in the agricultural and hill -regions that make up most of the country, to prevent your wandering where you please." Hesitating at a ditch, "a friendly hay -maker in the next meadow will hail you: You'll fin' a footstick down beyant the fince ..."

⁵ Michael Viney (editor), 'Eye on Nature', *The Irish Times on the Web*, 15 September 2001.

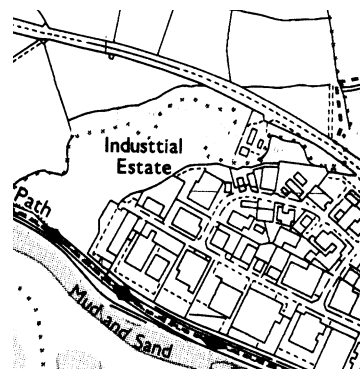
Errors and omissions excepted

It is always easy to find errors, even on OS maps; but my first two may amuse. The third is more worrying.

- *Explorer* sheet 209 shows, at TL 424610, a hitherto unknown institution called ‘Girton University’. In view of the history of the College, which was not admitted to the University of Cambridge for many decades, this must give great pleasure to the current Fellows.
- My 1995 edition of *Outdoor Leisure* 9 shows just west of Barnstaple (SS 5434) something called an ‘Industrail [sic] Estate’. Clearly someone received a wiggling, because *Explorer* 139, which overlaps, describes the same area as an ‘Industtial Estate’!



OLM 9, Exmoor (A1) 1995



Explorer 139 (A) 1998

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- Now that *Explorer* coverage has reached the Highlands of Scotland, the ‘key diagrams’ on the back cover show, *inter alia*, Munros – the 284 hills over 3000ft high which are listed by the Scottish Mountaineering Club and which more than 2500 people (including me) have now climbed. At least, that is what they say they do. In fact there are several errors, mostly of omission but some of commission. The worst instance is sheet 411 (Skye - Cuillin Hills) which marks fifteen Munros (one, Bla Bheinn, is correct but it is not numbered or listed) though there are only twelve Munros on Skye. One of the ‘Munros’ noted, Fionn Choire, is as its name implies not even a hill! Could not the resources of the OS stretch to a copy of the official list⁶?

This reference to matters hillwalking reminds me that the first reference in the article about A (he tried hard to keep his first name private) Wainwright (*Sheetlines* 62, 61) is surely incorrect, as is implicit from the dates given. I think it should read ‘*A Pictorial Guide to the Lakeland Fells, Book 1 - The Eastern Fells*, Westmorland Gazette, 1955 (also Michael Joseph)’.⁷

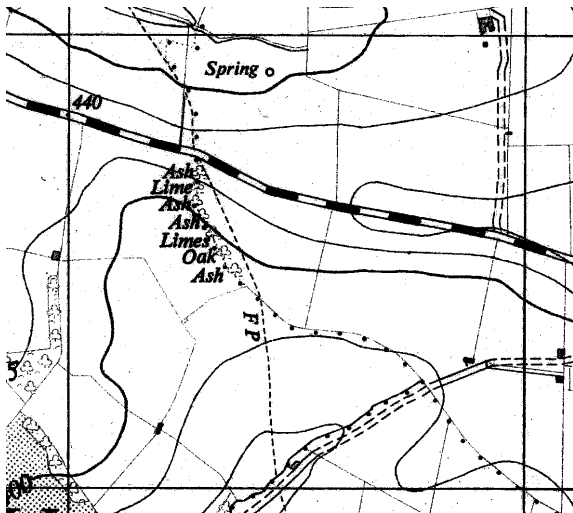
David Purchase

⁶ *Munro's Tables and other Tables of Lower Hills*, ‘New edition’, ed. Derek A Bearhop, Scottish Mountaineering Trust, 1997. [edition number not stated, but I would make it the fifth]

⁷ I’ve a nasty feeling that this was sloppy editing on my part! – CJH.

More Trees

The recent correspondence in *Sheetlines* about significant trees recorded on the Ordnance Survey map reminded me of a remarkable row of trees between Long Buckby and Flore – remarkable for the reason that the species of each is individually noted on the 1:25,000 First



Series map. Their existence was first recorded on the six-inch map (Northamptonshire sheet 43 NE) in the Edition of 1926, and plainly this edition was used as one of the source maps for 1:25,000 sheet SP 66. The seven trees – ash, lime, ash, ash, limes, oak, ash – are each faithfully accompanied by a tree symbol on the grey plate. The reason why these trees appear specifically marked on the map at all must be that they define part of the boundary between the parishes of Brington and Brockhall. Trees serving such a purpose are of course common enough, but how unusual is it for the Ordnance Survey to note their species so faithfully on the map?

Roger Hellyer

A row of three named species, ash, maple, oak, will be found on Explorer 117 at ST 665027, on the boundary between Cerne Abbas and Minterne Magna parishes in Dorset – CJH.

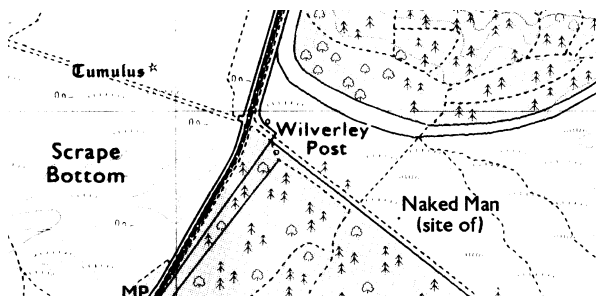
Naked Man found in New Forest

Recent correspondence in *Sheetlines* about named trees on Ordnance Survey small scale maps, and further discoveries of my own, shows that they are not as uncommon as I had thought. I have however been puzzled for some time by the name 'Naked Man' at SU 245018 in the New Forest that appears on all one-inch map series since 1904, until recently the earliest in my collection, although I now find that it does not appear on the Old Series as reprinted by David & Charles. Last summer I went to have a look at the site and found an ivy covered tree stump about 6ft high with a wooden rail fence round it, there was some evidence that it had been used for votive offerings, which is unusual in England, and there was a sapling oak tree also inside the fence. A small plaque on the fence states that it was the site of the Naked Man which is no help at all.



Third Edition sheet 134, Ringwood, 1909 (enlarged)

A visit to the New Forest Centre at Lyndhurst, with its useful reference library, revealed that the Naked Man was shown on W King's map of the Forest of 1787, and *The New Forest Book*⁸ states that although there was a legend that the tree was used as a gibbet for hanging smugglers, there is no evidence that this had ever happened. It seems however that the tree got its name once it had died because it looked rather like a naked man. If this is indeed so, it must be the last word in the correspondence about named trees on small scale maps in that although it still appears on maps today, it was already dead before Ordnance Survey came into being!



Outdoor Leisure map 22, New Forest, A edition, 1996.
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Aidan de la Mare

A genuine case of nominative determinism

I would like to add Frederick Stoneage to your list. He briefly joined the team of draughtsmen in the archaeology department of the Ordnance Survey in 1939. Reginald Jerrard was another member of the team. He told me when I met him in 1990 that the Archaeology Officer, O G S Crawford, in need of an additional draughtsman, was given a list of possible recruits drawn, I believe, from other departments within the Survey. Lighting upon the name Stoneage, he said "We must have him". Stoneage was responsible for the overprint drawing of two period maps, neither of which was to reach publication, thanks to the onset of war. He drew the *Amesbury* sheet, intended to join *Old Sarum* in the *Celtic Earthworks of Salisbury Plain* series, and *The Border (Roman Period)*, which would have followed *Scotland in Roman Times* in Crawford's vision of coverage of the whole of Roman Britain at the quarter inch scale. Proof copies of the former were printed, but of the latter the Director General refused to sanction even that, in spite of pressure from Crawford and some of the country's leading archaeologists. Extracts from Stoneage's overprint drawings for both maps appear in Roger Hellyer, 'The archaeological and historical maps of the Ordnance Survey', *Cartographic Journal* **26** (1989), 111-133 (pages 114-116).

Roger Hellyer

⁸ James O'Donald Mays, *New Forest Leaves*, Burley, 1989

New maps

Jon Risby

This list covers all small scale maps published between 20 March 2002 and 25 July 2002. They are listed by series, and in sheet number order. The columns are as follows: Sheet No. / Title / Edition / Copyright date / Full revision date / Latest revision date / Date of publication. There is also a list of maps due for publication by OS up to 2 October 2002 (in order of their proposed publication).

After the list of OS maps is a resumé of maps published by Alan Godfrey between March and July 2002.

Landranger

88	Newcastle upon Tyne, Durham & Sunderland	D1	2002	1999	2002	29/04/02
91	Appleby-in-Westmorland, Brough & Kirkby Stephen	C	2002	1996-97	2002	29/04/02
90	Penrith & Keswick, Ambleside	C1	2002	2000	2002	21/05/02
92	Barnard Castle & Richmond, Teesdale	C	2002	2000-01	2002	29/04/02
99	Northallerton & Ripon, Pateley Bridge & Leyburn	C1	2002	1997	2001	20/06/02
104	Leeds & Bradford, Harrogate & Ilkley	C1	2002	1997	2001	29/04/02
135	Aberystwyth & Machynlleth	C	2002	2001	2002	29/04/02
136	Newtown & Llanidloes	B1	2002	1999	2002	29/04/02
137	Ludlow & Church Stretton, Wenlock Edge	B1	2002	1998	2002	29/04/02
138	Kidderminster & Wyre Forest	B1	2002	1996	2002	29/04/02
145	Cardigan & Mynydd Preseli	C1	2002	1999	2002	29/04/02
146	Lampeter & Llandovery	B1	2002	1999	2002	29/04/02
147	Elan Valley & Builth Wells	C1	2002	1999-2000	2001	29/04/02
148	Presteigne & Hay-on-Wye	B1	2002	2000	2002	29/04/02
149	Hereford & Leominster, Bromyard & Ledbury	B1	2002	1998	2002	29/04/02
152	Northampton & Milton Keynes, Buckingham & Daventry	D1	2002	1999	2002	29/04/02
153	Bedford & Huntingdon, St Neots & Biggleswade	C1	2002	1998	2002	29/04/02
158	Tenby & Pembroke	B1	2002	1998	2002	29/04/02
159	Swansea & Gower, Carmarthen	C2	2002	1995-96	2002	29/04/02
160	Brecon Beacons	B1	2002	1999	2002	29/04/02
161	Abergavenny & The Black Mountains	B1	2002	1997	2002	29/04/02
162	Gloucester & Forest of Dean	C1	2002	1997	2002	29/04/02
163	Cheltenham & Cirencester, Stow-on-the-Wold	C1	2002	1999	2002	29/04/02
164	Oxford, Chipping Norton & Bicester	D	2002	2001	2002	29/04/02
165	Aylesbury & Leighton Buzzard, Thame & Berkhamsted	D	2002	2001-02	-	29/04/02
170	Vale of Glamorgan, Rhondda & Porthcawl	D1	2002	2000	2002	29/04/02
171	Cardiff & Newport, Pontypool	C1	2002	1997	2002	29/04/02
172	Bristol & Bath, Thornbury & Chew Magna	C2	2002	1997	2002	29/04/02
173	Swindon & Devizes, Marlborough & Trowbridge	D	2002	2001	-	29/04/02
174	Newbury & Wantage, Hungerford & Didcot	D	2002	2001	-	29/04/02
175	Reading & Windsor, Henley-on-Thames & Bracknell	C1	2002	1999	2002	29/04/02
176	West London, Rickmansworth & Staines	D2	2002	1996-98	2002	29/04/02
180	Barnstaple & Ilfracombe, Lynton & Bideford	C1	2002	1998	2002	29/04/02
181	Minehead & Brendon Hills, Dulverton & Tiverton	C1	2002	1998	2002	29/04/02
182	Weston-super-Mare, Bridgwater & Wells	C1	2002	1997	2002	29/04/02
185	Winchester & Basingstoke, Andover & Romsey	D1	2002	2000	2002	29/04/02
190	Bude & Clovelly, Boscastle & Holsworthy	C1	2002	1999	2001	29/04/02
191	Okehampton & North Dartmoor	C1	2002	1999	2001	29/04/02
200	Newquay & Bodmin, Camelford & St Austell	D	2002	2001	2002	29/04/02

201	Plymouth & Launceston, Tavistock & Looe	C1	2002	1995-96	2002	29/04/02
202	Torbay & South Dartmoor, Totnes & Salcombe	C1	2002	1996	2002	29/04/02
203	Land's End & Isles of Scilly, St Ives & Lizard Point	D	2002	2002	-	29/04/02
204	Truro & Falmouth, Roseland Peninsula	D	2002	2002	-	29/04/02

Explorer – new publications

360	Loch Awe & Inveraray, Dalmally, Dalavich & Furnace	A	2002	2002	-	17/07/02
372	Coll & Tiree	A	2002	2001	-	20/03/02
391	Ardgour & Strontian, Glenfinnan, Loch Eil & Loch Shiel	A	2002	2001	-	20/03/02
399	Loch Arkaig, Fort William & Corpach, Gairlochy, Achnacarry & Kingie	A	2002	2002	-	10/07/02
401	Loch Laggan & Creag Meagaidh, Corrieairick Pass	A	2002	2002	-	07/05/02
403	Cairn Gorm & Aviemore, Loch Morlich	A	2002	2001	-	20/03/02
404	Braemar, Tomintoul & Glen Avon, Beinn a' Bhuid & Ben Avon	A	2002	2001	-	20/03/02
405	Aboyne, Alford & Strathdon	A	2002	2002	-	03/04/02
420	Coreen Hills & Glenlivet, Bennachie & Ladder Hills, Insh & Rhynie	A	2002	2002	-	03/04/02

Touring maps – 1:100,000

Beds, Bucks & Herts and NW London	A	2002	11/01	01/02	10/04/02
Essex & NE London	A	2002	11/01	01/02	10/04/02
Kent & SE London	A	2002	11/01	01/02	10/04/02
London including the M25	A	2002	11/01	01/02	10/04/02
Surrey, East & West Sussex and SW London	A	2002	11/01	01/02	10/04/02
Northumberland	A	2002	02/02	03/02	06/06/02

The 2002 Small Scale Mapping Index was published May 2002

Irish maps

General Maps

Complete Road Atlas of Ireland	06/02
Dublin City & Environs Motoring Map	05/02
Holiday Map East	03/02
Holiday Map South	10/01
Holiday Map West	10/01

Discovery maps – new editions

25	Sligo (E), Leitrim, Roscommon	2nd Edition	01/02
50	Dublin, Kildare, Meath & Wicklow	2nd Edition	01/02
56	Wicklow, Dublin & Kildare	2nd Edition	01/02
63	Clare, Kerry	2nd Edition	01/02
64	Clare, Kerry & Limerick	2nd Edition	01/02
65	Clare, Limerick & Tipperary	2nd Edition	01/02
68	Carlow, Kilkenny & Wexford	2nd Edition	01/02
72	Kerry, Cork, Limerick	2nd Edition	01/02
84	Cork, Kerry	2nd Edition	10/01
87	Cork	2nd Edition	01/02
88	Cork	2nd Edition	10/01

Discover maps – new editions

7	Londonderry	B Edition	03/02
12	Strabane	B Edition	12/01
17	Lower Lough Erne	-	11/01
18	Enniskillen	B Edition	03/02
19	Armagh	B Edition	12/01
21	Strangford Lough	-	11/01
28	Monaghan	B Edition	03/02
29	The Mournes	-	11/01

Street maps

Dublin	10/01
Limerick	01/02

Forthcoming Maps

The following maps have been announced for publication.

Landranger

The sheets below, due to be published on 7 October, should have a copyright date of 2002.

1	Shetland – Yell, Unst and Fetlar	C1	29	Banff & Huntly, Portsoy & Turriff	B1
2	Shetland – Sullom Voe & Whalsay	C1	30	Fraserburgh, Peterhead & Ellon	B1
3	Shetland – North Mainland	C1	31	Barra & South Uist, Vatersay & Eriskay	C1
4	Shetland – South Mainland	C1	32	South Skye & Cuillin Hills	C1
5	Orkney – Northern Isles	B1	33	Loch Alsh, Glen Shiel & Loch Hourn	C1
6	Orkney – Mainland	B1	34	Fort Augustus, Glen Albyn & Glen Roy	B1
7	Orkney – Southern Isles	B1	35	Kingussie & Monadhliath Mountains	B1
8	Stornoway & North Lewis	C1	36	Grantown, Aviemore & Cairngorm Mountains	B1
9	Cape Wrath, Durness & Scourie	C	37	Strathdon	B
10	Strathnaver, Bettyhill & Tongue	B1	38	Aberdeen, Inverurie & Pitmedden	C
11	Thurso & Dunbeath	C1	39	Rum, Eigg & Muck	B1
12	Thurso & Wick, John O'Groats	C1	40	Mallaig & Glenfinnan, Loch Shiel	C
13	West Lewis & North Harris	C1	41	Ben Nevis, Fort William & Glen Coe	D
14	Tarbert & Loch Seaforth	C1	42	Glen Garry & Loch Rannoch	B1
15	Loch Assynt, Lochinver & Kylesku	B1	43	Braemar & Blair Atholl	C1
16	Lairg & Loch Shin, Loch Naver	B1	44	Ballater, Glen Clova	C1
17	Helmsdale & Strath of Kildonan	C	45	Stonehaven & Banchory	C
18	Sound of Harris, North Uist, Taransay & St Kilda	B1	46	Coll & Tiree	C1
19	Gairloch & Ullapool, Loch Maree	C	47	Tobermory & North Mull	C1
20	Beinn Dearg & Loch Broom, Ben Wyvis	B1	48	Iona & West Mull, Ulva	C1
21	Dornoch & Alness, Invergordon & Tain	C	49	Oban & East Mull	B1
22	Benbecula & South Uist	C1	50	Glen Orchy & Loch Etive	B1
23	North Skye, Dunvegan & Portree	C1	51	Loch Tay & Glen Dochart	B1
24	Raasay & Applecross, Loch Torridon & Plockton	B1	52	Pitlochry to Crieff	B1
25	Glen Carron & Glen Affric	B1	53	Blairgowrie & Forest of Alyth	B1
26	Inverness & Loch Ness, Strathglass	C1	54	Dundee & Montrose, Forfar & Arbroath	B1
27	Nairn & Forres, River Findhorn	C	55	Lochgilthead & Loch Awe	C
28	Elgin, Dufftown, Buckie & Keith	B1	56	Loch Lomond & Inveraray	C1
			57	Stirling & The Trossachs	B1

58	Perth to Alloa, Auchterarder	B1	81	Alnwick & Morpeth, Rothbury & Amble	B1
59	St Andrews, Kirkcaldy & Glenrothes	C1	82	Stranraer & Glenluce	C1
60	Islay	B1	83	Newton Stewart & Kirkcudbright, Gatehouse of Fleet	C
61	Jura & Colonsay	B1	84	Dumfries & Castle Douglas	B2
62	North Kintyre & Tarbert	C	85	Carlisle & Solway Firth, Gretna Green	C1
63	Firth of Clyde, Greenock & Rothesay	B1	86	Haltwhistle & Brampton, Bewcastle & Alston	C1
64	Glasgow, Motherwell & Airdrie	D	87	Hexham & Haltwhistle	C1
65	Falkirk & Linlithgow, Dunfermline	D1	89	West Cumbria, Cockermouth & Wast Water	C1
66	Edinburgh, Penicuik & North Berwick	C1	93	Middlesbrough, Darlington & Hartlepool	C1
67	Duns, Dunbar & Eyemouth	B1	94	Whitby & Esk Dale, Robin Hood's Bay	C2
68	South Kintyre & Campbeltown	B1	95	Isle of Man	B1
69	Isle of Arran	C1	98	Wensleydale & Upper Wharfedale	B1
70	Ayr, Kilmarnock & Troon	B1	100	Malton & Pickering, Helmsley & Easingwold	D1
71	Lanark & Upper Nithsdale	B1	101	Scarborough, Bridlington & Filey	C1
72	Upper Clyde Valley, Biggar & Lanark	D	105	York & Selby	C1
73	Peebles, Galashiels & Selkirk, Tweed Valley	C1	106	Market Weighton, Goole & Stamford Bridge	C1
74	Kelso & Coldstream, Jedburgh & Duns	C	107	Kingston upon Hull, Beverley & Driffield	C1
75	Berwick-upon-Tweed	B1	110	Sheffield & Huddersfield, Glossop & Holmfirth	C1
76	Girvan, Ballantrae & Barrhill	C1	111	Sheffield & Doncaster, Rotherham, Barnsley & Thorne	C1
77	Dalmellington & New Galloway, Galloway Forest Park	B1	112	Scunthorpe & Gainsborough	C1
78	Nithsdale & Annandale, Sanquhar & Moffat	B1	113	Grimsby, Louth & Market Rasen	D1
79	Hawick & Eskdale, Langholm	C1			
80	Cheviot Hills & Kielder Water	C1			

Explorer – new editions

114	Exeter & the Exe Valley	A1	31/07/02
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Explorer – new publications

373	Iona, Staffa & Ross of Mull	31/07/02
374	Isle of Mull North & Tobermory	31/07/02
375	Isle of Mull East	07/08/02
427	Peterhead & Fraserburgh	07/08/02
407	Skye – Dunvegan	21/08/02
408	Skye – Trotternish & The Storr	21/08/02
410	Skye – Portree & Braccadale	21/08/02
412	Skye – Sleat	21/08/02
398	Loch Morar & Mallaig	28/08/02
424	Buckie & Keith	11/09/02
383	Morven & Lochaline	18/09/02
415	Glen Affric & Glen Morrison	25/09/02
416	Inverness, Loch Ness & Culloden	25/09/02
421	Ellon & Inverurie	25/09/02
426	Banff, Macduff & Turrif	25/09/02
409	Raasay, Rona & Scalpay	02/10/02
414	Glen Shiel & Kintail Forest	02/10/02

Touring maps – 1:100,000

Hampshire & The Isle of Wight	10/07/02
Dorset, Somerset East, Bath & Bristol	10/07/02

Alan Godfrey Maps

Details of Alan Godfrey's reprints of old OS maps are available from Alan Godfrey Maps, Prospect Business Park, Leadgate, Consett, DH8 7PW, tel. 01207 583388, fax 01207 583399, or from their website at <http://www.alangodfreymaps.co.uk/>.

The columns are as follows: County / Sheet number / Title / Date of map / Month of issue.

Berkshire	28.12	Pangbourne & Whitchurch	1910	6/02
Cheshire	18.02	Altrincham (North) & Broadheath	1897	7/02
Denbighshire	28.02	Brymbo	1909	4/02
Denbighshire	35.02	Rhosllanerchrugog	1909	6/02
Co. Durham	33.04	Crook (West)	1896	4/02
Gloucestershire	72.09	Bristol (Ashley Down & Eastville)	1902	4/02
Lancashire	17.04	Grange Over Sands	1910	7/02
Lancashire	87.12	Bury (West)	1908	5/02
Lancashire	88.04	Rochdale (West)	1908	6/02
Lancashire	89.01	Rochdale	1908	3/02
Lancashire	99.02	Sefton Village	1907	5/02
London	92	Greenwich	1894	6/02
London	99	Putney Bridge	1913	6/02
London	106	Kidbrooke & East Blackheath	1914	4/02
London	170	Southend Village	1914	4/02
Merionethshire	8.13	Corwen	1899	6/02
Monmouthshire	23.03	Pontypool (South) & Griffithstown (North)	1917	3/02
Monmouthshire	33.04	Newport (South)	1917	5/02
Nottinghamshire	22.13	Mansfield (East)	1914	4/02
Nottinghamshire	22.16	Mansfield (West)	1914	4/02
Renfrewshire	8.11	Renfrew	1895	6/02
Rutland	9.02	Oakham	1903	3/02
Staffordshire	68.12	Handsworth Wood	1902	4/02
Warwickshire	8.10	Erdington (West) & Stockland Green	1913	6/02
Warwickshire	11.13	Chilvers Coton & Attelborough	1902	6/02
Yorkshire	218.09	Beeston & Beeston Hill	1905	4/02
Yorkshire	230.06	Mytholmroyd	1905	3/02
Yorkshire	295.10	Sheffield (Handsworth)	1901	7/02

England and Wales one-inch

64	Yorkshire Wolds (North)	1905	7/02
111	The White Peak	1906	7/02
150	Dinas Mawddwy & District	1904	7/02
151	Welshpool & District	1904-12	4/02
175	Diss & District	1907	4/02
195	Lampeter, Tregaron & District	1909	7/02
213	Brecon & District	1909	4/02
242/259	Foulness & Mersea	1904	4/02
244/245	South Pembrokeshire	1904	4/02