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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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The highlight of recent months has been the publication of the society’s latest book, Chris Higley’s *Old Series to Explorer A field guide to the Ordnance map*. This attractive and informative book was launched at the AGM in May and has been enthusiastically acclaimed by members and the book trade alike. Mike Parker’s review is on page 62.

Also at the AGM, the end of an era was heralded when our chairman Dr Christopher Board announced his intention to retire next year. Chris has steered the society with vision and diplomacy through a prolonged period of sustained growth and successful activities. His successor will be elected at 2012 AGM in accordance with the constitution, which appears in the Almanack distributed with this issue of *Sheetlines*.

Star turn at the AGM were Prof Ifan Shepherd and Steve Chilton of Middlesex University. They presented the preliminary results of their research into the First Edition OS six-inch maps published in the latter part of the nineteenth century. Innovative forms of cartographic research have revealed a complexity and richness of these maps which had not previously been known. They have compiled a cartobibliographic database from information derived from the maps and their margins. This is still work-in-progress and we hope to be able to publish a fuller version of their work in a future *Sheetlines*.

The society recently arranged expeditions to see something of the cartographic history of Germany and Ireland. Such trips provide an ideal opportunity to get to know other members as well as explore new places. Reports will appear in December *Sheetlines*. In Gotha the group (left) chartered a vintage tram on the Thüringerwaldbahn.

[photo Gerry Zierler]
**Map art on Irish covers and other material**

*Michael Richardson*

The map cover art of Ellis Martin and Arthur Palmer is well known on Ordnance Survey maps of England, Scotland and Wales, but the only known use on Irish covers has been the 'standard' half-inch (12.2a) and one-inch (10.2) Ellis Martin covers.\(^1\) Following partition in 1922, the Ordnance Survey of Ireland (OSI) no longer had ready access to the design and graphics facilities at OS Southampton and their first 'home produced' cover featured the arms of the four provinces in a Celtic interwoven border with the initials SE (Saorstát Éireann) and featuring a small sketch of Glendalough beneath the details of the map (*figures 1 and 2*). It was quite some time before I noticed that this sketch includes the initials ‘A. E. N.’ at the lower right corner and I was intrigued to find out more about the artist concerned.

Enquiries made to other Charles Close Society members interested in Irish mapping shed no light on the matter and I therefore turned to the OSI archives\(^2\) held by the National Archives in Dublin. The correspondence files for the years immediately after partition soon revealed a number of references to Civil Assistant (C/A) A E Nolan, but there was no mention of the ‘Glendalough’ cover design. A listing of OS staff in March 1922 included Nolan as an Established Officer and it is recorded that he was born on 1 April 1885 and had 21 years service, suggesting that he had started work on 1 April 1901 at the age of 16; he had qualified for the Civil Service Certificate on 20 July 1916. From records held at the General Register office I found that Albert Edward Nolan was born at Castleknock, Co. Dublin on 1 April 1885 to John and Rose Nolan. His father’s occupation was given as ‘surveyor’ so it seemed likely that he also had been employed at Phoenix Park. Indeed, there is a reference in the OSI archives for March 1886 of C/A John Nolan having

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\(^2\) Correspondence registers and indexes can be found under general heading OS/2, while individual files are listed under OS/5 for 1847-1890 and OS/6 for 1891-1934.
been reported to Southampton for being drunk on duty while engaged on a survey for the Land Judges Court. In a letter to Col Sir C Wilson KCB (the then Director General) Nolan says that he ‘will most anxiously pay all costs arising from the incorrect survey’. Nolan senior died on 12 February 1899 and the 1901 census lists ‘Bertie’ Nolan living with his widowed mother Rose in Castleknock. He is described as ‘temporary civil assistant, Ordnance Survey’ on what would have been his first day of work; in the census for 1911 his occupation was recorded as ‘Draughtsman, Ordnance Survey Office’.

In March 1921 a request for re-classification of C/A A E Nolan was made, recommending that he be promoted to Special Draughtsman as he had held the classification of Draughtsman Normal since the scheme was first introduced and had extensive experience of all aspects of the Department’s work. The request was turned down as there was no vacancy at that time but Nolan appealed and was granted an interview with the Director-General Sir Charles Close when he visited Dublin in September 1921; again he was told that promotion would depend on there being vacancies. In his letter requesting an interview with the Director General, Nolan mentions ‘having done all the ornament work of the Publication Department prior to the war, and since my return have been employed in writing duties and have done all classes of drawing’. No details of his war service are known, but a further study of the archives may shed some light on this. Following the establishment of the independent OSI in 1922, it appears that Nolan was at last successful in gaining promotion and forms for re-classification of several members of staff, including A E Nolan, were submitted in 1923. He married Christina McCormick on 16 June 1925 at St Agatha’s Church, North William Street; her father’s occupation was given as ‘book seller’.

In an effort to promote sales of their maps, the OSI regularly took a stand at the Royal Dublin Society (RDS) shows. From correspondence in April 1926 we find that Nolan and another employee were granted ‘time in lieu’ for work on preparation of posters for the Spring Show, but they appealed against this decision and he was eventually paid overtime for this additional work. A few months later, in June 1926 the Superintendent of the Printing Department wrote to say that ‘he is now ready to begin the preparation of the colour plates for the one inch Curragh District map’ and asked if Mr A E Nolan could be transferred permanently to the printing department so that the work could be proceeded with continuously; his transfer took place on 1 September 1926. In May of the following year designs were invited for two small leaflets advertising OS maps for circulation at the RDS Spring Show but there was insufficient time for them to be ready for that year’s show. The leaflets were to be in not more than two colours, in bold type and using as few words as possible. One would advertise the small scale maps – quarter-inch, half-inch and one-inch whilst the other, aimed at farmers and landowners, would promote the 1:2500 scale maps. The designs submitted were considered by the Director (Capt. Mew) and he awarded the prize of two guineas for the small scale leaflet (figure 3) to Nolan, who wrote to Mew on 11 July 1927 ‘Sir, I wish to express thanks for having been awarded the £2.2.0 for the design submitted and feel encouraged that my effort was considered
satisfactory’. I am indebted to Paul Ferguson for pointing out that certain elements of the design such as the car, cyclist etc appear to be based on OS Southampton material.

Apart from his work in the Printing Department at Phoenix Park, Nolan was active in the Ordnance Survey Staff Association and in July 1929 he wrote, as Honorary Secretary of the Association, to the Director of OSI to plead for special treatment in the case of a fellow employee who had died from injuries received in a cycle accident. The unfortunate victim had become eligible for establishment a few months before his death but this had not been done, rendering his widow ineligible for a pension. In response to Nolan’s letter the Department of Finance awarded a compassionate payment to the widow.

OSI published a 1:20,000 sheet of the Dublin area in 1931 at the (relatively) exorbitant price of six shillings, as part of their work on a series at that scale covering the whole country for military purposes, but disappointing sales led them to consider preparation of a five colour version with a cover design of Dublin Bay. This ‘Dublin & Environs’ sheet was launched in 1934 with extensive press coverage\(^3\) to bring it to the attention of the general public, and prices ranged from 1/6 to 2/6. Although the initial sketch of the cover design was produced by Col. Niall McNeill the final artwork was done by Nolan and cost estimates for the production of this map included three days work by him as ‘colour artist’. The style of this cover illustration (figure 4, reproduced with kind permission of the Board of Trinity College Dublin) is similar to that of his earlier Glendalough drawing although it must be said that neither shows the artistic merit of Martin’s and Palmer’s work.

In 1940 several staff, including Nolan were promoted to fill vacancies arising from the retirement of Mr A E Woodnutt (who was listed in the 1911 census as ‘Draughtsman, Ordnance Survey Board of Agriculture, England’). Then, in 1942 a number of senior staff were due to retire and a plan was proposed to amalgamate the Revision and Publication Branches of OSI with Lt. Gunn in charge and subdivided into a number of sections; Nolan was promoted to be Superintendent

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\(^3\) See e.g. the Dublin Letter in *The Cork Examiner* for 21 August 1934.
in charge of Section D/2 (Printing), but on a Principal Superintendent’s salary scale; at this time he was recorded as having 31 years’ service (20 years earlier his service was recorded as 21 years!). A photograph of Ordnance Survey staff taken at the Phoenix Park headquarters in November 1942 shows Nolan in the front row, third from left (fig.5).

In 1950, as he approached his 65th birthday Nolan wrote to apply for his pension and he was awarded a lump sum of £914-6-0 and an annual pension of £334-10-0. I have been unable to trace any record of his death, but the General Register records are available only up to 1958.

Although Nolan’s drawings of Glendalough and Dublin Bay appear to be the only known examples of Irish map cover art, my search of the correspondence files has revealed that there was a proposal by Col. Craster (Director of OS Phoenix Park) in November 1921 to use illustrated covers for the Dublin and Belfast district sheets, ‘similar to those for the English District maps’, and views which might be reproduced for the two covers were submitted. However, in reply Southampton advised that there may be a copyright issue and recommended that for the present the ‘reduced show card design’ would be best, though it is unclear which particular cover was being referred to. This idea never seems to have been revived (apart from the 1934 Dublin cover) and it would be another 60 years before photographs of local views appeared on the one inch District sheets for Cork, Dublin, Killarney and Wicklow.

Thanks are due to Roger Hellyer and Bob Lynch for helpful comments, to Leonard Hynes for the 1942 photograph of OSI staff and especially to Paul Ferguson for useful discussions and access to the Map Library, Trinity College Library Dublin.

Figure 4. Dublin & environs 1:20,000 (1934)

Figure 5. OSI Staff, 1942
The Ordnance Survey motoring atlas of Great Britain

John L Cruickshank

It seems rather curious that what must (by a very wide margin) have been the most commercially successful and frequently reprinted OS map product has received remarkably little mention in *Sheetlines*. Its demise in particular seems to have been completely unnoticed. Yet its story provides some telling illustrations of the shifting social, commercial and political fashions affecting the OS. It is worth tracing the rise and fall of this remarkable publication.

Does anyone else remember the road atlases of the 1950s and 1960s? Ours was a hard-back volume, purchased by my father when he was furnishing the marital home. It was shelved with the two volumes of the Shorter Oxford Dictionary, the many volumes of the Everyman Encyclopaedia, the Oxford Book of Quotations, Cruden’s Concordance (for crossword purposes much more useful than the Bible itself), and various other works of reference. It would be taken off the shelf perhaps two or three times a year to prepare an itinerary, which would carefully be written out in pencil on the back of an envelope. The atlas would then be put back on the shelf, while the envelope would go on the actual journey. Should a diversion from the planned route become necessary, it either had to be based on guesswork and road-signs, or on the map-diagrams in the yellow AA Handbook which was always in the glove compartment along with the key for the AA phone-boxes.

The atlas had been expensive, but was expected to retain its value for quite as long as the other reference works in the family library. Accordingly it had to be protected from damage. It was certainly not felt appropriate to expose it to the dangers of a modern motor journey.

The opening of the Preston by-pass did not initially disturb this mind-set. A single new road could be memorised. But the Lancaster by-pass followed, and then was connected to the Preston one, and through that was connected to further new motorways ramifying across the country. My father became increasingly irritated that his expensive investment in an atlas had been devalued by Ernest Marples and his successors. Nevertheless the existing volume was retained, on the basis that the expense of a replacement would only be

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1 Just four contributions have been identified. An anonymous, but insightful, reviewer (Q 6312) analysed the 1985 edition in *Sheetlines* 12 (1985), 12. This is still worth reading particularly for its analysis of the renovation of the underlying 1:250,000 mapping that preceded its publication. Chris Board wrote a detailed analysis of the further changes to the mapping introduced in the 1991 edition (*Sheetlines* 29 (1991), 33-35). This article too has continuing value. A brief précis of an article by John Paddy Browne from *OS News* in which he compares the 1993 *OS Motoring Atlas* with another soft-back publication, the *1993 Rand McNally Road Atlas, North America*, appeared in *Sheetlines* 37 (1993), 37-38. Finally a short note by Lionel Hooper about an error of detail in the 1995 edition (and giving its price when it was remaindered) appeared in *Sheetlines* 45 (1996), 27.
worthwhile once the motorway system was complete and new roads stopped being built.

The M62 was built just in time for us to use it to get me to medical school in Leeds in 1974. By now the old atlas was hopelessly behind the times but a variety of extraneous stop-gap maps and diagrams were tucked inside to supplement it.

Of course updated editions of the many road atlases of the country had intermittently been issued in the intervening years, but such atlases remained expensive substantial hard-back volumes sold by city-centre bookshops. They were still expected to retain their validity for extended periods, and their date of compilation was generally obscured so that any obsolescence was not obvious and old stock did not need to be remaindered. In 1983 the OS itself produced such an atlas, the ‘Ordinance Survey Road Atlas of Great Britain’, a hard-back A4 volume of 1:250,000 mapping.²

But in the same year the OS also blew this model apart. The Ordnance Survey Motoring Atlas of Great Britain was co-published in 1983 by Ordnance Survey and Temple Press, an imprint of Newnes Books, itself a division of the Hamlyn Publishing Group.³ Its large format (almost A3), soft cover and simple stapled binding were utterly unlike anything else on the market. The mapping it contained was an enlargement of the OS

² This atlas was, like the OS Motoring Atlas, a co-publication with Temple Press. It was reissued the same year in an edition for Book Club Associates which itself went through at least three impressions by 1984.

³ See below for further details of the successive changes in the private-sector co-publisher of the Atlas. Hamlyn had previously published in 1976 (as a conventional hard-back volume) The Hamlyn Road Atlas of Great Britain which was printed by Bartholomew and entirely composed of Bartholomew-copyright material. However in 1982 the OS co-published the Ordnance Survey Atlas of Great Britain with Country Life Books (another imprint of Newnes Books). Although much of this atlas consists of geographical thematic mapping not produced by Ordnance Survey it did contain OS 1:250,000 mapping giving full coverage of England, Wales and Scotland, the OS Index (gazetteer) to that series, and a ‘Short History of the Ordnance Survey’ along with some other OS material. Although quite different in purpose, it can thus be seen as a forerunner to the OS Motoring Atlas.
1:250,000 series mapping to 1:190,080 (three inches to the mile) for most of the country, and for the Highlands and Islands an enlargement of the 1:625,000 Routeplanner series to 1:443,520 (seven inches to the mile). The book opened with ‘Route Planning Maps’ which were two full-page diagrams of the motorway and trunk-road network accompanied not only by a table of distances in miles and kilometres, but also by individual diagrams of each of the limited-interchange motorway junctions in the country. At the back there was a full index of place-names (giving grid-references), a diagram of London Through Routes (the M25 was not yet open), a large coloured 1:10,000 map of central London and small monochrome 1:10,000 plans of thirty-six other town and city centres, together with some pictures of road-signs and other miscellaneous motoring information. Cheaply produced, it was priced at only £3.25, and thus undercut anything else on the market including the OS’s own 1:250,000 hard-back atlas and sheet maps. It was marketeted through petrol stations and motorway service stations as well as through traditional bookshops. It was an immediate runaway success and had to be reprinted repeatedly. I was slightly slow to buy a copy, and thus mine is from the sixth impression, but is still from 1983.

The atlas was manifestly not for the library. The binding was fragile, and the whole thing was too big and too floppy to stand upright on a library bookshelf. But in a vehicle on the road the flexible booklet was light and easy to use, and it was cheap enough that it did not matter if it got dog-eared or if the centre pages came adrift from the staples, or even if it acquired muddy footprints after falling onto the floor of a car or van. It could be treated (and was treated) as an ephemeral item.

This ephemeral nature became the key to its continuing success. In 1985 a second edition was produced incorporating some significant changes. The mapping of the Highlands and Islands was given at 1:316,800 (five miles to the inch) and was now a reduction from the same 1:250,000 series of which the remainder of the atlas was an enlargement. In this way the disparity in scales was reduced and the degree of detail presented for all parts of the country was equalised, while retaining some compression of the printed space devoted to thinly populated areas. Most other elements of the content followed the pattern of the first edition, although the road maps had been re-lettered, colours were added onto all the town plans and a page with a map showing National Parks, Forest Parks and Long Distance Footpaths that advertised OS Landranger and Outdoor Leisure Maps was omitted. A diagram of Routes into London (showing the sections of the M25 by then open) replaced the previous Through Routes diagram. Perfect binding also replaced the original staples, which made it slightly more robust than the original edition. The most significant innovation was however on the cover. Here the year ‘1985’ was presented in large red numerals

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4 Note that these imperial scales were only introduced after the OS had become otherwise fully metricated.

5 According to ‘Q 6312’ (Sheetlines 12, 12) there were eventually eight printings.

6 See ‘Q 6132’ (op. cit.) for a more detailed analysis of changes to the road maps.
immediately above the title of the atlas. The implications of this were profound. Not only was this a positive statement about the date of compilation, it was also a clear pointer to when the contents might be considered obsolete. It thus strongly reinforced the perception of the publication as an ephemeral document. And from 1985 onwards the OS Motoring Atlas became a regular annual publication with the clear implication that a new edition should be bought every year and the old one discarded. Continual change was inherent in the whole idea; not only would the maps be revised, but the other content could also be updated annually. And the public bought both the idea and the atlases.

The OS Motoring Atlas of Great Britain thus represented a radically new idea in British map publishing which created an enormous demand for a product that the publishers of traditional road atlases could not initially match. The cover of the 1986 edition accordingly carried in large letters obliquely across the bottom right-hand corner a claim to be ‘Britain’s best selling atlas’.

The content of the 1986 edition was essentially the same, although I have not tried to analyse how well the maps themselves had been updated. In 1987 the diagram of the M25 and the Routes into London was enlarged and showed the M25 as complete; it also advertised the area covered by the ABC London Street Atlas, itself a co-publication by the OS and Newnes. Other minor changes were that the mileage diagram was moved to the inside back cover and the map legend to page 5, while the title page now simply stated that Temple Press was part of Hamlyn Publishing.

The editorial changes in the 1987 edition were modest, but there was one fundamental change that became one of the persisting and indeed characteristic features of the series. This was the first edition to be published and copyrighted in the previous year. From this edition onwards publication of each new edition would take place in about September of the year before the date given on the cover. Thus, during the first half of the calendar year printed on the cover the approaching obsolescence of the edition was obscured. The old edition would then be remaindered in the middle of the year, allowing publication of the following year’s edition in September. The annual cycle was sufficiently dependable that I routinely delayed buying my copy of the atlas until it was remaindered in the summer. Unfortunately for the completeness of my collection, I was to spend the whole of 1990 in the USA, and having not thought to buy a copy of the 1990 edition at full price before leaving, the gap in my set remains.

Several significant changes were introduced for the 1988 edition. The page-numbering was changed, so that the introductory pages were given Roman numerals and the Arabic numbers began with the first map page. New larger and more brightly coloured town plans replaced the old ones, but they only included Central London and just eight major cities. A ‘new easy-to-use index’ abandoned the use of grid references and instead gave alpha-numeric references. Accordingly the numbering of the National Grid lines on the maps was now given in inconspicuous small blue figures and separate alphanumeric reference systems were given for each pair of pages. A choice of bindings was also offered from 1988 with the introduction of a spiral bound version of the atlas. The content of
the 1989 edition (in both versions) then remained almost the same, although there was a small but important change in the imprint on the title page: Hamlyn Publishing Group Limited was now a division of Octopus Publishing Group plc of Michelin House, Fulham Road, SW3. The space occupied by the index was reduced by reducing the height of the upper and lower margins. The resultant reduction in the number of pages led to the mileage diagram and radio-station information being moved from the back page to the inside front cover. The continuing success of the series was also trumpeted on the 1989 front cover in a banner immediately below the title declaring it to be ‘Great Britain’s No1 Bestseller’. Sales were indeed sufficient that a second impression was required.

The 1991 edition incorporated further substantial changes. Temple Press had disappeared from the imprint and the co-publisher was given as Hamlyn Publishing Group Limited, still a division of Octopus Publishing Group. Although the layout of the cover remained broadly similar to that used previously, and still incorporated a ‘Great Britain’s No1 Best Seller’ banner, an entirely new series of fonts and type-sizes was used (and of course the ‘OS 200 Years 1991’ logo was present). The cover also declared that the atlas contained ‘brand new mapping’. This was true in two different ways, Firstly the underlying 1:250,000 OS mapping had been redesigned with different fonts, more prominent layer colouring to balance the removal of the previous hill-shading, and the addition of a prominent yellow band along coasts to indicate sandy beaches. Secondly the number of town plans was once more increased, but in addition to the sixteen OS plans (four more than in the 1989 edition) there were another twenty eight based on George Philip cartography. These last have a very different appearance to the OS ones. This apparently innocuous introduction of non-OS mapping into the atlas can in retrospect be seen to be of immense future significance.

Despite the success of the Motoring Atlas there still remained a continuing market for traditional hard-back road atlases. In 1987 OS and Hamlyn had thus co-published (at £15) the ‘Ordnance Survey Touring Atlas of Great Britain’, the core of which was a repackaging of the contents of the Motoring Atlas into an A4 format with hard covers. The ‘Bicentenary Edition’ (i.e. fourth edition) of this Touring Atlas was produced in 1990. It was impressively cased in padded boards covered with dark-blue embossed fake-leather with gold and silver lettering and the OS Tower-of-London logo. This was the atlas that my father finally decided to buy to replace his thirty-year-old original one. He bought it in September 1991 as a birthday present for my mother, without realising that it was already a year out of date.

Returning to the Motoring Atlas, for the 1992 edition the Philip’s town plans were discarded and an expanded set of OS town plans was incorporated, forty-

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7 See Chris Board, (Sheetlines 29, 33-35), for a much more detailed analysis of the changes to the mapping.

8 The OS Touring Atlas did however include several pages of motorway strip-maps and also diagrams of the road approaches to fifteen ferry ports plus detailed plans of the road layouts and car-parks at twelve airports. These interesting and potentially quite useful diagrams were never included in the OS Motoring Atlas.
four in total in addition to the Central London plan and the diagram of the ‘M25 and Routes into London’. In 1993 the title of the atlas was slightly shortened to the ‘Ordnance Survey Motoring Atlas’. A further innovation for the 1993 edition was the inclusion of ‘Urban Area Mapping’, full-page detailed through-route diagrams (at an unspecified scale) of areas centred on Liverpool, Manchester, Birmingham (across two pages) and London (across four). This list was expanded in the 1994 edition to include the Edinburgh, Glasgow, Leeds and Bradford, and Newcastle areas. There was also a page with diagrams of the UK and French Channel Tunnel Terminals that were to open during the year. This incorporated an extract from the Michelin Motoring Atlas of France showing the approaches to Calais.

The content of the 1995 edition was largely unchanged. What was significant was that the cover ceased to claim that the atlas was ‘Britain’s No1 Best-Seller’. Now it simply declared that it was ‘from Britain’s No1 map publisher’. The market was clearly getting tighter; the AA in particular had been progressively developing their own soft-back annual atlas and had become a very serious competitor. From 1992 they had also become co-publishers with the Institut Géographique National of a copycat publication, the ‘AA Big Road Atlas of France Belgium and Luxembourg’. The concept for this atlas was almost identical with that of the OS Motoring Atlas, in that it packaged official French (and Belgian) 1:250,000 mapping, together with a large number of town plans, in a cheap, soft-back volume with the same large format. This atlas too has become an annual publication (although it should be noted that Belgium and Luxembourg were dropped in 2001 and the edition-numbering was then reset). Other very similar atlases were appearing elsewhere. The ‘1993 Rand McNally Atlas, North America’ was discussed by John Paddy Browne, but a series of large-format soft-back atlases of individual US states (giving 1:150,000 topographic mapping) was being published by the DeLorme Mapping Company from 1989 onwards. In 1996 a large-format, soft-back, spiral-bound ‘Illustrated Atlas of South, Central, East Africa’ was published by MapStudio of Wynberg and Cape Town, South Africa. Many other more-or-less similar publications from around the world could be cited, including even a large-format, soft-back street-atlas of Moscow.

The title of the 1996 edition was slightly re-expanded to ‘Ordnance Survey Motoring Atlas Britain’. It included for the first time an ‘Events Diary’ produced for the year by the British Tourist Authority. While I myself never found these pages useful, someone must have, because they subsequently became an enduring element of the atlas. A crass error however appeared in large figures on the cover: the scale was given as 1:200,000 and then as 3 miles to 1 inch. It takes little knowledge of either mathematics or map-reading to know that these are not the same. The actual scale of the atlas maps was 1:190,080, as previously, and (as previously) the legend stated that this was ‘about’ 3 miles to one inch. My calculation suggests that this representative fraction is exactly equivalent to three

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miles to the inch, and while no map projection can avoid some distortion, the word ‘about’ seems both unnecessary and misleading. The cover was quite simply a mistake that made clear that the graphic design team had very little knowledge of, or respect for, the product for which they were designing a cover. Ellis Martin would surely not have been impressed!

By the 1998 edition the Events Diary had been joined by further pages giving directories of National Trust and National Trust for Scotland properties, plus those of English Heritage and Historic Scotland, but not those of Cadw (their Welsh equivalent). On this basis the front cover claimed that it had ‘more tourist information than any other atlas’. The previous error in the scale given on the cover was partially corrected, to 1:190,000 and 3 miles to 1 inch. What the point of this unnecessary rounding might have been completely baffles me. To pedants it was insulting, and to everybody else it was irrelevant, if it was seen at all. By now the cover was so cluttered with various coloured banners with different house-styles and logos that little was likely to be read by any purchaser. One of these banners proclaimed ‘New look, ultra-clear maps from Britain’s National Mapping Agency’, but this clarity was not apparent on the cover. The maps themselves had had a fairly subtle face-lift in that the fonts used for place-names had been altered, the green lines representing trunk roads were broader and their associated road-numbers were made more prominent. The page on the Channel Tunnel terminals had gone, and a new page of ‘Boundary Information; National & Forest Parks; Long Distance Paths’ had appeared, but there was little other change in the content.

The 2000 edition added several further minor changes but one very important one. At the end of the tourist-information pages was now an additional page with details of gardens open to Royal Horticultural Society members and a list of ‘Historic Royal Palaces’ open to the public. A corner of this page was used for a tiny advertisement for the Council for British Archaeology. A set of diagrams giving boundary information now appeared on the inside-back cover (with advertisements for OS Street Atlases). A new separate map titled ‘Scenic areas, cycling walking’ presented the newly-existing, almost-existing, and hoped-for National Cycle Network routes in prominent colours and the better-known long-distance footpaths in almost invisible pecked lines. The important change was in the copyright statement on the title page. Previously the whole volume had been Crown Copyright. Now, while the three-inch and five-inch mapping, the route-planning map, the M25 and Routes into Central London map and the Central London map remained simply Crown Copyright, the other maps were listed as jointly copyright with George Philip Ltd. Furthermore Philip’s (as part of Octopus Publishing Group) were also specified as the co-publisher with Ordnance Survey. Philip’s were of course a very long-established publisher of maps. Until now, with the exception of the provision of the town plans printed in the 1991 edition, they

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10 Nevertheless while the National Trust and English Heritage were advertised on the cover neither the National Trust for Scotland nor Historic Scotland were mentioned there. Colonialist and English-supremacist attitudes die hard!
had not been involved in the publication of the OS Motoring Atlas. The new copyright statement and the change in co-publisher make clear that the balance of power in the co-publication arrangement had now shifted. Furthermore this represented only the first stage of what was to be a very profound change indeed.

There was however a version of the atlas published that remained fully Crown Copyright. ‘The Ordnance Survey Road Atlas 2000 Britain’ was a staple-bound large-format soft-back pamphlet (not unlike the first edition of the OS Motoring Atlas from 1983). It contained only those elements of the Motoring Atlas that were purely Crown Copyright and was co-published with ‘Bounty’, another imprint of Octopus Publishing Group. Its cover price was £6.99 (a pound less than the Motoring Atlas), however I never saw it on sale at the cover price, but only at a much reduced price (£2.99) in remainder bookshops. An exactly similar OS Road Atlas 2001 was also co-published with the same cover price. I bought my copy (already remaindered to £2.99) as early as September 2000!

Although the 2001 Motoring Atlas of Britain had Ordnance Survey in big letters twice on its cover (which closely resembled that of previous years and thus also included a large OS logo), it was not published by Ordnance Survey! The attributions of copyright were as for the 2000 edition, but the publication was attributed to Philip’s alone. The content was almost the same, the removal of the small advertisement for the Council for British Archaeology being the only obvious change. However a tiny but significant point was that the advertisement for the Ordnance Survey Street Atlases inside the back cover no longer gave both the OS web address and that of Philip’s side by side; only the Philip’s address was now there.

So at this point we are left considering the definition of the words ‘Ordnance Survey map’. The 2001 atlas called itself an Ordnance Survey atlas on its front cover and title page, which seems clear enough, yet it was published by someone else. In subsequent years the ambiguity only increases. The 2002 edition had very much the same cover design, but a Philips’ logo now appeared in the lower part of the front and at the bottom of the title page. Furthermore the mapping was now ‘licensed from Ordnance Survey’. The advertisement for the Street Atlases at the back is now headed with the Philip’s logo alongside the OS one, and the volumes pictured all have the Philip’s name along with Ordnance Survey on their front covers.\textsuperscript{11} The 2003 edition continued what had become a progressive transformation. Although at first sight it appeared much the same as the previous one, the Philip’s logo was moved from the bottom to the top of both the front cover and the title page. And, by my definition, this edition was the last one to count as an OS atlas.

\textsuperscript{11} A further novelty was the inclusion of a voucher for a £50 discount on a city-break holiday. John Paddy Browne in his article (\textit{Sheetlines} 37, 37-38) had regarded such vouchers as an Americanism that the OS should not copy. Philip’s clearly felt otherwise!
For 2004 a new atlas was published at the usual time, in the usual format, with a cover very similar to that of previous editions, but it no longer called itself an Ordnance Survey atlas. Beside the large Philip’s logo on the cover was a smaller logo reading ‘Mapping sourced from the Ordnance Survey’. On the title page the only OS logo was a tiny one in amongst the small print of the copyright information beside the phrase ‘This product includes mapping data licensed from Ordnance Survey’. And the OS mapping had been changed. Firstly the standard scale had been reduced to 1:200,000 (even though the cover still described this as ‘3 miles to 1 inch’). And secondly the OS mapping had been modified. Most noticeable to me was the introduction of the Gaelic versions of the names for the Isle of Lewis and others of the Western Isles, but there are a host of other changes, innovations and introductions. Perhaps not unreasonably, Philip’s chose to reset the edition numbering at this point. And so it seems clear to me that this atlas is not an OS atlas. However equally clearly there is complete continuity between this atlas, which still uses OS mapping as its foundation, and the OS atlases of the 1980s. And this therefore leaves us with a continuing ambiguity about the definition of the words ‘Ordnance Survey map’.

But of course there was still the Ordnance Survey Road Atlas 200x Britain, which had contained just the mapping for which the OS retained sole copyright. Except there wasn’t, because this too was republished (still by ‘Bounty Books’) as the ‘Philip’s Motorist’s Atlas 2004 Britain’ with both ‘cartography by Philip’s’ and ‘mapping sourced from Ordnance Survey’. In this atlas too the scale was reduced to 1:200,000 (although the cover continued the confusion by still stating that it was 1:190,000).

Thus by late 2003 the transfer of the OS’s biggest-selling product to the private sector was complete. Instead of developing and exploiting its resources itself, as it had for the previous 200 years, the OS now merely licensed others to use and modify OS mapping. One hopes that the licence fees were, and are, substantial, and also that they are based not simply on a current-cost valuation but also on a capital valuation, because by transferring the principal product based on the OS
1:250,000 mapping to the private sector the OS sharply reduced its own ability to exploit this mapping and thus diminished the residual value of its intellectual property. The recent abandonment by the OS of its own publication of any 1:250,000 paper mapping makes this quite clear.\(^{12}\) In return for their license fee Philip’s now effectively have a sole-user right to what was once one of the OS’s flagship products. The current edition of what is now called the ‘Philip’s Road Atlas’ remains a market leader, and because of the quality of its mapping it successfully sells for a significantly higher price than its principal competitor, an AA atlas. This price differential is a measure of the value of the OS mapping now controlled by Philip’s. Philip’s have clearly benefited from the acquisition of this mapping. It is less clear whether OS has also benefited.

I do not know what the licensing fee for this sole-user right currently is or has been. This is no doubt regarded as commercially sensitive information that is not for publication. However as members of the public we are the ultimate owners of the OS as a commercial enterprise. If any company listed on a stock market had sold sole-user rights to one of its flagship products to another firm in the same sector the deal would certainly have affected the share price, the direction of change being the outcome of the market’s view on whether the price gained for the sale of the asset was good or bad. The stock market rules would therefore have required disclosure of the terms of the deal. For a chief executive to survive in office he would have had to persuade not just his board but also his shareholders that the sale was to their advantage and did not diminish the value of the company. The terms of the deal would not only have been published but would have been widely debated by interested parties. Yet although the OS is public property I am not aware that there has been any public debate about the terms of the deal with Philip’s (which covers much more mapping than just the 1:250,000 series) or what its effects on the present or future sale value of the OS might be.

Of course the then Labour Chancellor of the Exchequer (subsequently the Prime Minister) claimed great economic competence and prudence. He was also well known for exerting detailed financial control over all government organisations. Nevertheless it is not a conventional socialist policy to divert a person or organisation away from the direct exploitation of its own resources by its own labour into the role of a rentier, dependant on ‘unearned’ income. Furthermore Gordon Brown’s subsequent announcement in the run-up to the 2010 General Election that the OS copyrights, on which this rentier income depend, were to be abolished suggests confusion and memory-loss rather than competence and prudence.

\(^{12}\) See Ed Fielden, ‘OS efficiency review: two-dozen Travel Map sheets discontinued’, Sheetlines 87 (2010), 50. There still remain however a few grossly over-enlarged derivatives of the series (covering tourist areas) within the OS Travel Map - Tour series. These should perhaps be considered as a large-print edition for the visually impaired.
Tracking exactly who owned and controlled the successive private-sector co-publishers of the *OS Motoring Atlas* is less than straightforward because the imprints on the title pages only give part of the story.\(^{13}\) Beginning in 1947, Paul Hamlyn made his name and fortune publishing and selling cheaply-printed colourful books through non-traditional outlets to a mass-market. As such he was a controversial figure who upset many establishment figures in traditional publishing. The publication of the *OS Motoring Atlas of Great Britain* was thus a typical Paul Hamlyn enterprise. However Paul Hamlyn bought and sold his own companies without hesitation. Thus he sold the publishing company bearing his name to IPC Books in 1964, becoming chairman of IPC as part of the deal. He lost this chairmanship however in 1970 when IPC merged with Albert E Reed to form Reed International. In 1971 he founded a new company, Octopus Books, which rapidly expanded to become a major publisher both in its own right and by taking over many long-established British publishing names, including that of George Philip. The *OS Motoring Atlas of Great Britain* was thus first launched at a time when Hamlyn Publishing was part of Reed International, but had no connection with Paul Hamlyn himself. However Paul Hamlyn’s vehicle Octopus Books then bought Hamlyn Publishing from Reed International in 1986. Paul Hamlyn became chairman of both of the Octopus Publishing Group and its subsidiary the Hamlyn Publishing Group. With Terence Conran he had also bought the old Michelin Building in London and this became the headquarters of all his companies. He retained the chairmanship of both Octopus and Hamlyn the following year when he sold all his publishing interests once more to Reed International in a deal that made him by far the largest shareholder in that company. Furthermore he continued to be chairman of both Octopus and

\(^{13}\) Much of this and the next paragraph is derived from obituaries of Hamlyn published in *The Telegraph* (4 September 2001) and *The Independent* (4 September 2001). These are available on-line from the websites of those newspapers.
Hamlyn after the merger of Reed International with the Dutch firm Elsevier to form Reed Elsevier in 1993. Only in 1997 as his health was failing did he give up the chairmanship of Octopus Publishing, and he retained the chairmanship of Hamlyn Publishing until his death in 2001. Thus while Paul Hamlyn was not involved in the birth of the OS Motoring Atlas, he was most certainly involved in its subsequent development, and in its eventual conversion from a co-publication into a fully private publication.

From 1990 onwards Paul Hamlyn had become a frequent major donor to Labour Party campaign funds. In 1997 his donation of £500,000 covered more than half of the launch costs of the Labour election manifesto. Following the Labour victory that year he was ennobled in 1998 as Baron Hamlyn of Edgeworth (officially in recognition of his substantial charitable donations). Hamlyn continued to be a major donor to the Labour Party and in January 2001 was revealed to have donated two million pounds anonymously shortly before such anonymous donations were outlawed. That Hamlyn was bank-rolling the governing party at the time when he was also negotiating the transfer of a major asset from the Ordnance Survey to a private-sector company controlled by himself is of course not in itself an indication of any improper behaviour. It is however disturbing that there has been so little transparency about the deal and its financial terms. One would have thought that the public officials involved would, for their own protection, have wished for greater openness.

Paul Hamlyn’s death in August 2001 led to major changes in Reed Elsevier. In particular Octopus Publishing, with all its subsidiaries including both Hamlyn Publishing and Philip’s, was sold before the end of 2001 to the French publishing house Hachette Livre. Hachette is itself owned by Lagardère, a quoted French media company.\(^\text{14}\) It should be noted that the process of conversion of the OS Motoring Atlas from a co-publication to a private publication was still, on the face

\(^\text{14}\) See [www.lagardere.com/group-274.html](http://www.lagardere.com/group-274.html)
of it, incomplete at the time of this sale. The publication of the atlas had however already been transferred to Philip’s and their then owners during 2000. Octopus Publishing Group continues to publish books using nine different imprints (including Philip’s, Hamlyn, and Bounty Books), but is now just one of several divisions of Hachette Livre active as publishers in the UK.

Ten years later there seems little likelihood that the OS could ever recover the use-right to this mapping from Hachette. At some point OS will have to concede this and negotiate a final sale. For all I know it may already have done so. At that point a further category is created in the range of possible definitions of an ‘Ordnance Survey map’. Those studying antique maps are accustomed to the idea that reproduction material, especially copper plates, would routinely be sold from publisher to publisher and new impressions would be made with greater or lesser change, sometimes centuries after the original publication date. Until now this has never been part of the OS story. However it now seems probable that Hachette and their successors will continue to publish what used to be the OS 1:250,000 map (now at the customary French scale of 1:200,000) for the indefinite future. And the companies and their reproduction material may yet be sold on again, and again.

Is this a bad thing? Well that depends on your view of what the OS and other public services are, and are for. The sale of this map may well ensure its continued publication for a very long time indeed. The private sector will not readily abandon such an asset in the way that the OS has hitherto routinely done when a new map-series has been launched. Our grand-children and great-grand-children may well come to see the OS / Philip’s / Hachette road-atlases as an enduring monument to the late-twentieth-century Ordnance Survey.

Nevertheless, that it is a French company that currently has the sole use-right to one of the principal British official maps does seem rather strange. And while at present the military and strategic aims of Britain and France are closely aligned, it has not always been so. William Roy and many of his successors would certainly
have regarded the sale of such reproduction material to the French as treasonous.

I hope that this sometimes dry description of the evolution of the OS Motoring Atlas shows that the series is not without interest and deserves greater attention. This article is certainly not a definitive account. Wholly missing are most of the personalities involved. Who was it who had the original idea, who persuaded the (seldom entrepreneurial) OS to adopt it, and who drove the idea to completion? We lack the personal memoirs of senior staff of the OS from the last quarter-century that might reveal these things (and indeed much else). More importantly, we also lack concrete information about the costings of the atlas, its sales at full price and at remaindered prices, and the income generated. How profitable the atlas truly was could only be judged by establishing the proportion of the overall costs of maintaining the OS 1:250,000 map that should have been attributed to it. These figures are not trivial issues of remote financial history. They remain the benchmarks by which we the public and our elected representatives should be judging whether the current licensing arrangements are appropriate. The present lack of transparency about them should be a matter of significant public concern.

And finally a more personal comment. I fear that those of us who are map collectors are guilty of a degree of snobbery. We collect and trade all sorts of obscure OS products and ephemera. But how often do you see old copies of the OS Motoring Atlas for sale on the second-hand market? Would you buy one? Is your set complete? Mine certainly isn’t, even though I tried to be systematic in purchasing copies each year. And despite the huge numbers printed and sold, destruction has been equally huge. I suspect that some editions of the Motoring Atlas may in the long run prove to be amongst the rarest of OS publications in both library and private collections. Those copies that do still survive should now be cherished, even if their bindings have come adrift, their corners are dog-eared and torn, and their pages have indecipherable biro annotations from long-forgotten journeys. As with trench maps, the very essence of the OS Motoring Atlas is that a pristine copy can never have seen active service.

New colour palette at OS

OS report that they have developed a new colour palette to improve colour differentiation by those suffering colour vision deficiency (CVD), ‘colour blindness’. They hope the new palette will improve legibility for all types of CVD, and are considering its use on future map products.

http://blog.ordnancesurvey.co.uk/2011/05/maps-for-the-colour-blind-now-a-reality

Old

&

New

with thanks to
James Mackay
Ordnance Survey and OpenStreetMap:
UK mapping is getting crowded

Steve Chilton

Introduction
Following a mention of working on the OpenStreetMap project (OSM) at the talk given at the CCS AGM in May, the editor suggested Sheetlines readers might be interested in some background to the project, what it is and why it exists. Initial thoughts were along the lines of ‘what relevance does this have for OS aficionados’? Hopefully, by considering how OSM is similar to OS, and also, importantly, how it differs, some understanding will be gained. In this short article it is hoped to address those issues, and along the way illustrate how the geodata landscape is rapidly changing just now.

Background
To address the question above a trawl was undertaken of the volumes of Sheetlines since joining CCS (consisting of the last seven issues) to see how much material was included that would be considered tangential to Ordnance Survey specific matters. The initial impression – that there would be none – was actually changed on looking at the summary. There were a significant number of mentions of peripheral subject matter, such as some new map products from non-OS publishers, and some visit reports. There are a couple of more significant pieces of non-OS content, such as those on Irish postcodes and Loc8 by Paul Ferguson and Gary Delaney respectively, and perhaps Alex Kent’s two-part article on cartographic styles. Also noted were how few pieces there were about contemporary OS work. CCS is the society for the ‘study of Ordnance Survey maps’ after all, and not specifically the ‘study of the history of OS maps’. In these two years of output there were only two significant articles – one by Anthony Cartmell and one by David Archer. Hopefully the content of this piece will redress that balance in some small way.

OpenStreetMap
So, what is OpenStreetMap? According to the project wiki ‘OpenStreetMap creates and provides free geographic data such as street maps to anyone who wants them. The project was started because most maps you think of as free actually have legal or technical restrictions on their use, holding back people from using them in creative, productive, or unexpected ways.’ The back-story to that is that

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1 The author is Educational Development Manager in the Centre for Learning and Teaching Enhancement, Middlesex University. He is also Chair of the Society of Cartographers, and a leading member of the OSM community.
2 Sheetlines 89, 16-18.
3 Sheetlines 90, 38-40.
4 Sheetlines 87,19-28 and 88, 11-16.
5 Sheetlines 87, 39-43.
6 Sheetlines 89, 33-35.
7 http://wiki.openstreetmap.org/wiki/Main_Page
it was the frustration of the restrictive license of the Ordnance Survey at the time (2004) that made the OSM founder Steve Coast decide that there should be an alternative. He was a postgraduate student at UCL at the time and just wanted to send a map of a party to some friends. He had this wild idea that by using a consumer-grade GPS unit he could survey the area he was interested in and produce his own map. His next leap of faith was to think ‘why not get others to do the same for their immediate area and then we could map the world’. Oh, yes, and ‘we could release the data with a Creative Commons licence to allow them to use the data in interesting ways’ – as noted above. That is the bare bones of the gestation of the project. Coast (2006), in a presentation on the project at the Society of Cartographers conference in the early days predicted global take-up – and many thought there was no chance of this happening. How wrong was it possible to have been? There are now over 400,000 registered contributors in the project, and in well-mapped areas it provides a fantastically detailed and accurate map and geodatabase. However, this is not the time and place to give a detailed history of OpenStreetMap. Actually, there is a job for someone to do just that, as it hasn’t been documented – to the best of the author's knowledge – although some history (and much other detail) is covered in Ramm et al (2011).

**Rivals to OS**

These are changing times for Ordnance Survey. There have been other startups trying to take on the monopolistic position that the OS have been in as far as providing detailed map data in the UK is concerned. As well as OpenStreetMap there have been the efforts of both UK Map and the People’s Map. UK Map is ‘a modern, highly detailed and feature rich mapping database created independently of Ordnance Survey’.8 The layered data is very detailed and has been digitised from original aerial photography of the Geoinformation Group. Unfortunately, it is currently only available for London. The People’s Map is ‘an exciting new mapping concept which enables any individual or organisation to create and maintain maps of Britain by ‘drawing’ features like roads, land use and point of interests over aerial photography, using simple online editing tools’.9 So, the difference from UK Map is that it crowd-sourced data, although seeded by information by its ‘backers’ – Getmapping (aerial photography) and XYZ Maps (reference data sets). It seems, however, that the project is now moribund. The latest news entry on the website is dated 18 March 2010, and the forum has very few entries, mostly from 2009. Lastly the map, as displayed in the web browser on the website, has an alarmingly poor level of detail, with even the main road network incomplete.

**OS OpenData**

It is possible that these two developments were, in effect, sidelined by the announcement by the UK Government that Ordnance Survey was to release some of its data freely under the OpenData proposal on 1 April 2010. The

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8 [www.geoinformationgroup.co.uk/products/mapping](http://www.geoinformationgroup.co.uk/products/mapping)
9 [http://peoplesmap.com](http://peoplesmap.com)
announcement of this eventuality was made by Vanessa Lawrence during her keynote speech at the International Cartographic Association conference in Santiago, Chile the previous November. Your correspondent was there to witness this momentous announcement and readers might be interested in a personal take on it. The following is a slightly amended version of a piece published in the SoC Bulletin (Chilton, 2009):

‘Vanessa Lawrence (CEO of OS) was giving a keynote presentation. Blow me down if Gordon Brown doesn’t make the announcement that very day about proposed changes at the OS, and freeing-up some OS data maps and data.

So Vanessa is halfway round the world and frantically re-writing her keynote presentation. But the amusing thing to me was that a couple of people who had been in my presentation [where I had predicted OS having to make significant changes] came up to me and said things on the lines of ‘I see what you were inferring in your presentation yesterday’, and making me out to be some kind of seer or person with inside information – neither of which is remotely true.

Vanessa gave a consummate performance in the keynote, underlining the point that the government had certainly better back the theory with appropriate funding if the OS was to retain its position as supplier of high quality geo-data. By the simple expedient of offering to carry her suitcase I was invited to lunch by Vanessa that day. Whilst OS are obviously trying to keep abreast of technologically-led developments I suspect she herself has a slightly old-fashioned outlook. She was particularly surprised that No.10 had actually released the information about proposed changes at OS via Twitter, rather than by a traditional press release (which admittedly came later). She also impressed on me that our lunch conversation was strictly ‘off the record’, and that under no circumstances was I to be off tweeting it directly afterwards. I can honestly say that, tempting as it might have been, I respected her enough to not do anything of the sort. There were indeed some fascinating insights on possible ways forward for OS, funding, future of paper products, staff issues etc within our conversation. An indication of the global nature of communications was Vanessa’s view that there was actually no problem with her being in South America when the news broke, and she was not dashing home on the next plane. She was in constant contact with her managers at OS, and able to record video messages for her staff to be availed of her views on their future, etc. So not THAT old-fashioned then.’

Changes at OS

So, what effect did all this have on OS? Between that announcement in November 2009 and the making available of some data on 1 April 2010 there was a consultation on the way forward, which has already been commented on significantly in this publication. Much credit to OS for getting the portal in place to release the agreed data in a timely fashion in April, although those of a cynical nature (myself included) suggested that they had inside information well before the closing date of the consultation in order to make those arrangements in
advance. As well as the OpenData provision that OS had to encompass, the whole situation seemed to act as catalyst to other changes at the organization that started bringing it well into the new era. One of these was the OpenSpace initiative. The OS OpenSpace API is free to access and lets developers create web applications and online projects with OS maps. Initially the tile access limits were hugely restrictive and caused all sorts of issues. These have been relaxed, but are still in place, unless you opt for the ‘charged utility pricing model’ – i.e. the Pro version. The initial service has morphed into web-map builder, and now you can pick up ready-made code to embed an OpenSpace instance in a web page or popular blogs such as Wordpress or Blogger. Next came Geovation, which is ‘about helping communities address their unmet needs through the application of geographic data, skills and expertise’ – i.e. using OS data. Geovation, along with OpenSpace and OpenData, all have their own blogs and use twitter to disseminate information about developments.

**OS OpenData and OSM**

Some pundits were predicting that the release of OS OpenData would sound the death knell for OpenStreetMap, or that the project would just incorporate all the OS OpenData and have nothing else to do in the UK. In fact neither of those scenarios came to pass. The fact that MasterMap is not included in the OpenData package, and that therefore large scale data is still costly to licence, meant that the existing excellent provision of large scale data within OSM would be expanded on by the micromappers in the project. It is worth noting that whilst much of the original data collection for OSM was with commercial grade GPS units (and still is to a considerable extent) there has been the possibility of using high-resolution aerial imagery from Bing as a source more recently. This has been rectified and tiled as backdrop in the editing software and has enabled mapping as detailed as the area of Sutton Coldfield illustrated (figure 1), and level of detail of the OpenStreetMap data compares very favourably with other available mapping sources (e.g. Google and OS OpenData StreetView).

A fuller analysis of the data released by the OS OpenData initiative and the reasons for it not being imported into the OSM dataset is given in a recent paper in the Cartographic Journal. In this, Chilton (2011) concludes ‘OS OpenData gives access to places one cannot otherwise go, such as docks, but so does aerial photography. It provides features such as power lines and some waterways that cross land that one does not have access to. It gives access to the official, up-to-date boundary data that are just not available in any other form that can be used. It is much more up-to-date than some of the aerial imagery and some of the

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10 [http://openspace.ordnancesurvey.co.uk/openspace](http://openspace.ordnancesurvey.co.uk/openspace)
11 [www.geovation.org.uk](http://www.geovation.org.uk)
13 Google comparison: [http://tools.geofabrik.de/mc/?mt0=mapnik&mt1=googlemap&lon=1.82075&lat=52.56039&zoom=17](http://tools.geofabrik.de/mc/?mt0=mapnik&mt1=googlemap&lon=1.82075&lat=52.56039&zoom=17) [OS StreetView](http://tools.geofabrik.de/mc/?mt0=mapnik&mt1=ossv&lon=1.82075&lat=52.56039&zoom=17)
datasets have names in them (StreetView and Locator), though that does have some small level of errors. There is also the postcode dataset which is a valuable source of data that would be very difficult to gather exhaustively otherwise. However, despite all, this there has not been, and there is very little likelihood of there being, large-scale import of OS data into OSM. It will, however, continue to be used in various ways as a check mechanism for locally surveyed data.

![Figure 1. Detailed OSM mapping of Sutton Coldfield, from ground survey and aerial imagery. (OpenStreetMap data licensed under Creative Commons Attribution-ShareAlike 2.0)](image)

**Uses of OS OpenData with OSM**

One of the reasons for the conclusion above is that the project has always aimed at being a new and up-to-date map, and not just a repository of other’s geodata. However, if existing data can be used to compile features difficult to survey in the field then consideration has been given to using it in some cases. For instance, water features are difficult to survey in the field with a GPS device. These are distinguishable on early Ordnance Survey maps that are now out of copyright and are unlikely to have changed significantly since then. Members of the project who have accumulated full sets of OS New Popular Edition one-inch maps, and also those from the OS 7th Series, have had them scanned, and then geo-rectified and then made available via a web server as backdrops in the two standard OSM editors. These scanned maps are available for others to trace or derive data from, under a Creative Commons licence. Significant amounts of rivers and streams have been added to OSM from the New Popular Edition sources (figure 2), and more recently water features such as the lochans on the Isle of Lewis from the 7th Series maps (figure 3).

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One strange manifestation of the availability of OS OpenData has been the move by OSM data users to emulate the printed OS output form, but enhanced with other data that is not in the OpenData set. One example takes VectorMapDistrict, Landform Panorama and ‘mashes’ it with footpath data from OSM to produce a resulting map that emulates the Landranger style of mapping, by applying OS-style colours and lettering as it renders the tiles to the web server. The developer (OSM, 2011) notes that ‘the end result is reasonable

15 www.free-map.org.uk/expts/vmdlfp200
though it is a shame that the VMD data does not include service roads; the result is often that footpaths disappear in thin air close to a road due to a missing service road. On a more commercial basis, a company in Yorkshire has been putting a map together using a mixture of OS StreetView (buildings), OS VectorMap District (roads, forests, water, crags), OS Landform Panorama (contours, relief), OS BoundaryLine (civil parish names), OS Strategic (national park boundaries, mountain range names) and OpenStreetMap (point names, footpaths, parks, schools, etc.). Similarly, apps for mobile phones are now proliferating. One such is the UK Map app — for iPhone, iPad and Android — which combines many of the OS OpenData sets with footpath data from OSM (fig 4), and also has a separate 3D version for the Lake District.

![Figure 4. Screenshot of the iPad version of UK Map app](contains Ordnance Survey data © Crown Copyright and database right 2010, and OpenStreetMap data licensed under Creative Commons Attribution-ShareAlike 2.0)

**Research**

Ordnance Survey clearly identifies its research strands as: Usability, Automatic change detection, Data improvement, 3D data modelling, Linked data web, Mobile devices. The OpenStreetMap project is grappling with similar topics, in its own way. Members are looking at the usability of both the map and the underlying data. Change detection and data improvement are a function of community building. Areas that are well mapped and kept up-to-date are usually those that have individuals or groups of people out surveying and checking.

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16 [www.grough.co.uk/lib/documents/tmp/iss/nn17.jpg](www.grough.co.uk/lib/documents/tmp/iss/nn17.jpg)
17 see story on page 59 of this issue.
18 [www.ordnancesurvey.co.uk/oswebsite/education-and-research/research/index.html](www.ordnancesurvey.co.uk/oswebsite/education-and-research/research/index.html)
constantly, and monitoring the RSS feeds of changes being made to the data. The value of the availability of OSM data has been demonstrated by the numbers of people working in 3D developments with that data. The project wiki currently lists 22 such developments. The market for mobile services based on the data seems insatiable. Again, the wiki lists many such add-on projects in fields such as: routing, 3D, editing, transport, etc.

Finally, one of the questions often asked is whether data collected by such disparate methods, such as consumer GPS devices, can be accurate enough to use for real. Findings from several different OSM accuracy studies have concluded that it most certainly is. Haklay (2008), when commenting on a quality analysis of OSM data against OS Meridian data, stated that ‘this preliminary study has shown that VGI [volunteered geographic information] can reach very good spatial data quality’. Further research by Amer (2010) concluded ‘these results proved that in terms of positional accuracy, OSM has the potential to deliver highly accurate results which can be achieved purely from the use of handheld GPS receivers’. Details of all the extensive, and global, research on and into OpenStreetMap can be obtained via links on the project wiki.

Conclusion

The foregoing gives some insight into the gestation, scope and influence of the OpenStreetMap crowd-sourcing geodata and map project. It remains to be seen whether OSM will establish itself as a viable alternative to Ordnance Survey for large scale map data users. What is evident is that it is already in many different ways a wide-ranging, and influential, player in this changing geodata world.

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F Ramm, J Topf and S Chilton (2011), OpenStreetMap: using and enhancing the free map of the world, Cambridge, UIT.

20 http://wiki.openstreetmap.org/wiki/3D_Development

21 http://wiki.openstreetmap.org/wiki/List_of_OSM_based_Services

22 http://wiki.openstreetmap.org/wiki/Research#Activities
The Manchester Ship Canal and early large scales revision
Richard Dean

Prior to World War I the Ordnance Survey had a fairly rigid policy of only surveying and revising their large scale plans on county-wide cyclical basis. Not only did the opening of the Manchester Ship Canal have a major impact on the economy of the region, but it is a rare example of the Ordnance Survey being moved to partially revise their large scale plans outwith the normal cycle.

The whole of Cheshire had been surveyed and published in 1870-5. Because Lancashire already enjoyed an excellent, if very outdated, six-inch survey dating from the 1840s it was at the end of the queue for 1:2500 coverage,1 and publication of the new maps at the larger scale was not finally completed until 1894 – and these were not entirely new, being enlarged replottings of the earlier survey data, revised on the ground in 1888-93.

The Manchester Ship Canal was under construction during this period, being opened for business on New Year's Day 1894, with a formal ceremony by Queen Victoria in May. It was a massive feat of civil engineering which completely transformed the valley of the Rivers Mersey and Irwell, but the OS seems only to have recorded any works that were substantially complete, other areas where the original topography had already been disturbed being simply left blank on the plans. In a couple of cases2 there is a note ‘Manchester Ship Canal works in course of construction’.

It does not seem to be recorded whether OS themselves decided on issuing amended sheets to show the completed canal, or if there was external pressure,3 but a revision of the whole Ship Canal route from Eastham to Manchester was undertaken in 18944 and the relevant revised 1:2500 Lancashire sheets and derived six-inch revisions appeared with a publication date of 1895 or 1896. The most common twenty-five inch survivors in map collections are later reprints of these sheets, with a bold ‘SECOND EDITION’ added to the heading.5

The policy was to fully revise the whole of any sheet that contained a length of the canal.6 Along the county boundary the twenty-five inch plans were completed to their edges with revised Cheshire detail; the six-inch quarter-sheets used this as far as it extended, and were filled up to their limits with redrawn but unrevised detail from the earlier Cheshire survey. However, within the Mersey estuary7 (Sheets 117 and 118), publication, except for 118.4, was only at the six-inch scale, although the revision pattern appears to have been the same. Quite a

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1 Although six parishes were dealt with earlier, including Eccles in 1876.
2 Sheets 104.9 and 104.13.
3 Richard Oliver wonders if Henry Crook had anything to do with it? He lived at Eccles!
4 Perhaps using the same surveyors who had just finished the county-wide work.
5 See for example the Lancashire Record Office collection (www.digitalarchives.co.uk).
6 But this does not explain the inclusion of 114.12 (Ditton) and 118.3 (Hale).
7 Below Runcorn Gap the OS seems to have been uncertain whether the estuary was in Lancashire or Cheshire and hedged their bets by including it in the initial surveys of both counties.
bit of Cheshire, including Ellesmere Port and some Wirral villages, was captured by the revisers.

During 1897 the first cyclic revision of Cheshire took place, and this included all the parts of the county that had been revised only three years earlier in connection with Lancashire. On publication in 1899 these sheets, on both scales, reverted to the old policy of not filling up with Lancashire material, giving in parts a very broken view of the canal, but showing the first moves near Warrington towards a rationalisation of administrative boundaries to follow such a well-defined feature – this process was completed in stages 1896-1933 for the length between Moore and Irlam, later extended all the way to Manchester. Cheshire was revised again in 1904-9, and Lancashire 1904-12.

This interaction between revised areas and the county boundary has given an interesting sequence of frequent revisions for a few areas in Cheshire. The best example is Runcorn, as illustrated by the series of extracts below.
Cheshire 1:2500 sheet XXIV.3, surveyed 1874

Lancashire 1:2500 sheet CXV.13, revised 1894

Cheshire 1:2500 sheet XXIV.3, revised 1897

Cheshire 1:2500 sheet XXIV.3, revised 1905

A sequence of frequent revisions of Runcorn
The first sketches on the covers of the post-war Scottish Popular one-inch maps were described in part 4 of this series of articles. The cover sketches on later covers were studied for this report and some intriguing changes were discovered. This research was hindered because sales of Scottish Popular maps were sluggish, making the later covers scarce. Just over 20% of New Popular covers have price change stickers (277 out of 1372 seen, data courtesy P S Welham) but for Scottish Populars the figure is double at 40% (108 out of 265 seen). The percentage for the highlands and islands is higher still. Some maps published in 1948 can be found with their first covers re-priced in 1950, then again in 1952 and a third time in 1958. The result is a limited number of examples of late covers for some sheets and apparently none at all for a few others, so it was decided to delay publication until reasonably comprehensive data was available. A short recapitulation may therefore be excused.

**Introduction**

The Popular Edition one-inch map of Scotland with National Grid was published between August 1945 and April 1948 in the cover illustrated in *figure 1a*. The typical examples alongside show the development of the cover design.

The sketch maps are predominantly landscape format but nineteen are portrait. The font used for place names on the sketches on nearly half of the initial covers was Caslon and for the rest the font was the more modern Times. This difference divided Scotland geographically into three zones. Sheets of zone 1 to the south were published first using Caslon. The publication dates of those of zone 2 in the north-east with Caslon and zone 3 covering the rest of Scotland with Times overlapped each other. The zones revealed by the decision to change from Caslon to Times font as the edition was issued may therefore show the publishing priority that was originally intended.

**Zone 1, sheets 59 to 92**

The first covers on sheets in this zone, in cover group KA-S3, have Caslon sketches. When the later KA-S5 covers were printed, new sketches were used with Times font for placenames. All the Times sketches are new drawings. Half of the Times sketches differ significantly from the Caslon in the choice of placenames but many have an unchanged selection. The two extremes are illustrated in *figures 2 and 3*. Some new sketches have more names, some fewer, but nine to eleven is the norm. An extreme example is sketch 83, *Loch Doon*,

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2 For a description of Scottish Popular cover variants see *Sheetlines* 84, 33-41.
where on both versions only a meagre two placenames merited inclusion, besides the loch of the title, see figure 1a.

On sketch 61, *Oban & Loch Awe*, Inveraray in Caslon was changed to Inverary in Times, although all the editions of the sheet use the former spelling. On sketch 76, *Kintyre*, the Caslon version had a mysterious unnamed coastal community – the Times replacement identified it as Glenbarr. On sketch 79, *Lanark*, Blyth Bridge is labelled Blythe Bridge on both the Caslon and the Times sketches.

The scarce cover group KA-S4 is an unpredictable transition, bridging from KA-S3 with Caslon to KA-S5 with Times. As an example, the KA-S4.1,4 cover for

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**Figure 1. Typical covers showing the design progression from KA-S3 to KA-S4, KA-S5 and KA-S6**

- above left 1a. Cover KA-S3
- above centre 1b. The transitional cover KA-S4
- above right 1c. Cover KA-S5
- left 1d. Cover KA-S6 (no GR)
sheet 74, *Edinburgh*, is shown in figure 1b, with ‘Popular Edition’ large, ‘Sheet 74’ in Caslon Founders Type Old Style, see figure 4b, and the original Caslon sketch retained. On the other hand, the same style KA-S4.1,4 cover of the adjacent sheet 68, *Firth of Forth*, has a new Times sketch.

**Zone 2, sheets 27 to 31 and 38 to 40**

The KA-S3 covers on sheets in this zone also have Caslon sketches. When the KA-S5 covers were printed, new sketches were used with Times font for placenames. The Times sketches differ from the Caslon in the drawing of coast and rivers, and the selection of settlements, but no overall trend is evident. For the new sketch 31, *Peterhead*, Port Errol is corrected to Port Erroll. The new Times sketch for sheet 39, *Dufftown & Huntly*, appears first on the transitional KA-S4.1,4 cover.

In zones 1 and 2 there were no Caslon sketches on the KA-S5 covers and no subsequent changes to the new Times sketches.

**Zone 3**

The covers in this zone (all the rest of Scotland) have Times place names on the sketches from first publication. Sketch 34, *The Cuillins, Rhum & Canna*, is the sole example of a change during the currency of the KA-S3 cover – water lining of the coasts was increased from double to the normal quadruple.

The Times sketches of many of these maps were redrawn at some stage, usually for KA-S5 covers. New sketches were made for sheets 4, 10, 11, 15, 19, 23, 25, 26, 33, 34 (2), 35 (2), 36, 37, 41, 42, 43, 44, 45, 46, 47, 55, 56 (2), 57 and 58.
In a few cases, the old Times sketch was used on an early KA-S5 cover. When this was done, the sheet number line is small, printed with moveable type, 2.7 mm high, point size 12; the new Times sketch on the later cover has the sheet number line the standard height of 3.0 mm by photo-reduction of a drawing with an integral sheet number line. Examples of small sheet number lines have been seen for covers 37, 46, 54, 57 and 58. See figure 4 where the sheet number lines of sheet 58 are shown for the old Times sketch (c) and the new (d). The same phenomenon was observed on New Popular covers, see part 2 of this study.

There was no apparent fault with most of the redundant sketches, indeed many replacements are very similar. The reason for renewal was likely to be the non-availability of the original artwork to implement the policy of avoiding typesetting errors by having the sheet number line integral to the sketch map block.

The two sketches 34 and 35 originally had just doubled coastlines and the lochs of the adjacent sketch 36 had no water lining. All three were heavily revised. The new sketch 35, *Sound of Sleat*, had added water lining, rivers were introduced and the spelling of Ardavasar used on the map was adopted. The result was cluttered and soon replaced by a third version (see figure 5). When the poor quality sketch 36 for *Lochcarron & Dornie* was redrawn, Lochcarron itself and Loch Carron were added and Dornie was moved to a more accurate location. To quote Saul Bellow, ‘It is sometimes necessary to repeat what we all know. All mapmakers should place the Mississippi in the same location, and avoid originality.’

The new sketch 26 had a fault though, an unnamed settlement ring beside Upper Loch Torridon; so had sketch 56, which replaced Aberfeldy by Abelfeldy – this was corrected later on a third version made by an adjustment to the second drawing. On the new sketch 37 East Croachy was renamed Croachy.

The new sketch 58 identified Friockheim as the unlabelled location on its predecessor.

The original sketches appear to be retained unchanged for sheets 1, 6, 9, 17, 20, 21, 24, 32, 49, 50, 51, 52, 53 and 54 when the sheet number lines were made integral to the blocks. These include some of the less populated areas, presumably with fewer sales.

Some covers in this zone were not available for comparison.

**Comparison of Scotland with England and Wales**

- For the later covers, all Caslon sketches made for Scotland were replaced with Times, whereas for the New Popular edition, only the covers in England that had Caslon were renewed with Times; the Caslon sketches in south Wales were retained.
- All the Caslon sketches for Scotland were replaced with Times sketches that included the sheet number line which was made integral to the sketch map

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3 Mr Sammler's Planet (1970).
block. This is the same as was done on the later covers of the New Popular edition when Caslon sketches in England were replaced.

- In zone 3, the Scottish covers had Times sketches from the start, so, for the later covers, sketch map blocks were made that included the sheet number line, either by re-using the same sketch or by drawing a new one. This is different from the findings of the study of the New Popular edition of England and Wales, where the original Times sketches, found north of a line between Aberystwyth and Hull, were retained and moveable type point size 12 was used for the sheet number lines on the later covers; a small cluster of sketches in the Cumbria region, however, were eventually renewed to the Scottish model.

- When the Seventh Series was introduced, unlike New Popular sketches for England and Wales, Scottish Popular sketches were no use because of the new sheet lines. With the abandoned sketches went the idiosyncratic sloping gridlines on the maps themselves and the distinguished cover design, replaced, though with the same colour scheme, by the retro *art deco* graphic of the Sevenths, one unified series for Great Britain.

**Acknowledgements**

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Figure 5. Sketches for the cover of Sound of Sleat

*left 5a. Caslon with minimal water lining and ‘Ardvasar’*
*centre 5b. the first Times font version with ‘Ardavasar’*
*right 5c. the second Times font version with ‘Ardavasar’*

*Image 5b courtesy Peter Gibson*
The Ordnance Survey Act, tidelines and the growth of a myth
Richard Oliver

Two recent articles by Brian Baily, in the Cartographic Journal and in Sheetlines, make a substantial contribution to the study of Ordnance Survey mapping of tidelines in the twentieth century. However, both repeat a misconception about the OS, that it has a legal obligation to map public boundaries, including tidelines, and both accept without question the rationale for the Survey’s adoption of ‘ordinary’, ‘medium’ or ‘mean’ as a basis for tidelines in England and Wales. The purpose of the present paper is to explain first the genesis of the Ordnance Survey Act, 1841 (4 & 5 Victoria, chapter 30), second the genesis of the concept of an obligation to undertake boundary mapping, and third certain points as to the mapping of tidelines in the later nineteenth century.

The origins of the Ordnance Survey Act of 1841

The authority under which the Ordnance Survey has undertaken boundary mapping is an Act of 1841, commonly referred to as the Ordnance Survey Act, though the original title is somewhat different. The origins of the Act were explained in a brief note published in Sheetlines in 1988, which was written following one of Ordnance Survey’s numerous claims of a legal obligation to map boundaries under the 1841 Act: what follows is a fuller exposition.

It is well known that the Survey’s early mapping was militarily-oriented, usually at the two-inch (1:31,680) scale with a view to publication at the one-inch (1:63,360) scale. The specification of such mapping was nominally determined by military rather than civil requirements, but in practice the two were so nearly the same that by 1819, when over half of England and Wales had been mapped and a start was made on Scotland, the justification for continuing the work was civil rather than military. It was presumably only a matter of time before a similar survey was undertaken in Ireland, but when the survey of that country did begin, in 1824-5, it was of a somewhat different nature from those in Britain. It was at the six-inch (1:10,560) scale, and whilst it was intended to provide all the details that were being recorded in Britain, and with a similar end in view of one-inch publication, its principal justification was as a survey for fiscal purposes of the boundaries of townlands, the smallest official division. In Britain the one-inch map showed county boundaries, and sometimes a few others: sheet 70 (1824) showed the Soke of Grantham, and by the late 1830s some borough boundaries.

2 An Act to authorize and facilitate the completion of a survey of Great Britain, Berwick upon Tweed, and the Isle of Man, 4 & 5 Vict., cap 30, 21 June 1841.
were appearing on newly-surveyed maps. It was symptomatic of the greater concern for accuracy cultivated by Colonel Thomas Colby after he took charge of the Survey in 1820 that the recording of county boundaries was refined: the change is epitomised by the contrast between the disregarding of a kink in the Kent-Surrey boundary where it follows a Roman road near Chelsham on sheet 6 (1819) on the one hand, and the small detached parts of Derbyshire and Staffordshire on sheet 72 SE (1836) on the other. In contrast, both Christopher Greenwood and Andrew Bryant showed parish and some other boundaries on their contemporary one-inch county maps, even if sometimes with questionable planimetric accuracy; thus in Britain the Ordnance Survey was decidedly conservative.

Although in Ireland all the actual surveying and subsequent cartographic processes were undertaken by the Ordnance Survey, they were effectively an intermediate stage in a larger process. The Irish valuation department ascertained the boundaries on the ground, and used the finished maps as a framework for the townland valuation that was the justification for the survey in the first place. In order to ascertain what townlands and other administrative divisions existed, an Act of 1824 directed that lists were to be prepared by county grand juries; this was quickly replaced by another Act in 1825, which retained the obligation to prepare lists, and included powers for representatives of the Lord Lieutenant (in practice the valuation department) to enter lands in order to ascertain and mark the position of townland and other public boundaries, and power for the Board of Ordnance’s representatives (in practice the Survey) to enter lands to survey the boundaries thus marked, and to erect any necessary ‘objects’ (i.e. poles marking trigonometrical points, and the like) in order to facilitate their work. The most substantial provision of the 1825 Act was that the boundaries determined using its powers were henceforth to be the legal boundaries of the townlands and other divisions.

The balance of the Irish survey soon shifted away from any residual military small-scale topographical basis, with boundary recording appended (and in the earlier stages carried out as a separate field operation by the Ordnance surveyors), towards something rather more elaborate: a comprehensive record of the boundaries and a comprehensive record of the landscape mutually complementing each other. This shift had been anticipated in 1825 by Colby’s instruction that the six-inch mapping was ‘to be drawn with all the accuracy and minuteness of detail which that scale admits’, except for the fields: a decade later

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4 The symbol for the Soke of Grantham boundary appears in the bottom margin of sheet 70: this seems to be the only example of a legend on a one-inch map before 1886. The rationale for borough and other boundaries appearing has yet to be investigated.

5 An Act...tables of manors, parishes, town lands and other sub-denominations of land, in Ireland, for the purpose of providing for the future survey and valuation... and for settling the boundaries of counties, cities and towns..., 5 Geo. IV, c.112, 24 June 1824; An Act... relative to the forming tables of manors, parishes, and townships in Ireland, and to make provisions for ascertaining the boundaries of the same, 6 Geo. IV, cap 99, 5 July 1825.
these were being mapped as well.\textsuperscript{6}

The survey of Scotland begun in 1819 progressed slowly and was abandoned in 1828. By 1834 there was a definite demand for a resumption of work, and by 1839 Colby had persuaded the leading campaigners that the six-inch scale should be adopted. At this time survey in England had only reached slightly to the north of the Humber and the Mersey, and a demand for the six-inch scale arose there too; both campaigns had geological applications at root. An argument for adopting the six-inch in place of the one-inch was that the Irish survey was nearing completion and a large trained workforce would shortly become available. The survey at six-inch of Scotland and northern England was duly authorised by the Treasury in October 1840.

Colby produced several reports arguing the case for the six-inch; that of 11 July 1840 is of relevance here. In it he said that it would be necessary to pass a short Act of Parliament, along the lines of that of 1825 for the Irish survey, which would enable the Ordnance surveyors to ascertain boundaries, would give a right of entry into lands and would protect trigonometrical poles and similar markers. Hitherto in Britain trigonometrical markers had been liable to disturbance, thereby impeding observations to them from other stations, and on earlier Ordnance surveys ‘the surveyors neglected the survey of the lesser streams, to obviate the inconvenience of trespassing and to save themselves trouble; those maps on which the streams were mostly inserted by sketches from distant views, became, before they were revised, of very little use to the mineral surveyors or geologists, to whom the correct position of the streams and watercourses is the most valuable information a map can give.’

Powers of entry would also be useful for surveying county and parish boundaries.\textsuperscript{7} Colby did not mention that in the past march routes had been used in Britain; perhaps, in the light of Irish experience, this method had been found cumbersome.\textsuperscript{8}

The necessary Bill was duly published in February 1841 and passed into law on 21 June, having received a number of amendments and additional sections that were partly to do with terminology, and had the effect of increasing verbosity in disproportion to substance, but included two substantial additions. Section XII provided that nothing done under the Act was to affect any property rights or claims, and section XVIII provided that its powers were to expire on 31 December 1846. Section XII was similar to section XV of the 1825 Irish Act, and seems to have been inserted to meet the objections of Lord Granville Somerset; it


\textsuperscript{7} Colby to Inspector-General of Fortifications, 11 July 1840, in The National Archives (Public Record Office) [TNA PRO] WO 44/702; printed in \textit{Correspondence respecting the scale for the Ordnance Survey…}, British Parliamentary Papers, House of Commons series [BPP (HC)] 1854 (1831), XLI, 187, pp 13-14.

\textsuperscript{8} Colby to Lord F Somerset, 2 September 1820: copy at f.124 in PRO TNA OS 3/260.
is unclear what the genesis of section XVIII was. There seems to have been a
general expectation that the six-inch survey of northern Britain would proceed
expeditiously, and that there would be no need for the powers conferred under
the Act to continue indefinitely. The most substantial difference between the 1825
and 1841 Acts was that the 1841 Act contained no provision for the boundaries
ascertained using its powers to have any legal status. Common to both Acts were
the powers to compel co-operation from county and other officials and from
individuals, and to enter lands and erect markers.9

The 1841 Act was to ‘authorise and facilitate’ the survey of Britain: in this it
was similar to a railway, in that an Act enabled the railway to be constructed, and
lands to be entered into and compulsorily purchased, but it did not compel
construction.10 Neither the 1825 Act nor that of 1841 made any mention of scale
of survey.

**The Ordnance Survey in the nineteenth century: an occasion**

The apparent lack of importance attached by contemporaries to the Ordnance
Survey’s boundary recording is evident from the development of the Survey after
1840. The 1841 Act was renewed in 1846 and at intervals thereafter: it was made
permanent in 1922.11 This apparently rather makeshift attitude is more explicable
in the light of the prevailing nineteenth century attitude towards the Ordnance
Survey, which was essentially that it was an occasion rather than an institution:
once the survey was complete the organisation could be largely disbanded.12
Thus any powers such as those conferred by the Act of 1841 need not run
indefinitely. (Given later contentions that the OS was *obliged* to map boundaries,
this limitation in time is of considerable significance.) Once again, there is an
analogy with railway Acts: they invariably limited the time for which powers were
available for the construction of the line and, if a line was not completed when

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9 The bill as originally presented on 1 February 1841 (*A bill to authorize and facilitate the
completion of a survey of Great Britain and the Isle of Man*) is in British Parliamentary Papers
(House of Commons Series) 1841-Sess.I (79), III, 3; the amended version of 1 April is *ibid
*(202), III, 11; the further amended version of 26 May, which introduced sections XII and
XVIII, is at *ibid* (335), III, 21. The only records of discussion in *Hansard’s Parliamentary
Debates*, Third Series, are in Vol LVI, cc 529-33, LVII, cc 510-12, and 772-3. Procedural
records will be found in *Journals of the House of Commons*, 96, 311, 331-2, 342, 364; for
delays to the bill, *ibid*, 152, 157, 171, 191, 227, 251, 258, 275, 282, 290, 295, 308. The Act is 4
& 5 Vict., cap XXX: the reference to the bill in Baily, ‘Ordnance Survey data collection
policy…’, 6, n.4, is unfortunate, as a bill has no legal effect: it is merely a proposal.

10 Some Acts did compel the provision of a train service once the line was completed: the
Lewes and East Grinstead line is a well-known example of this (opened 1882, closed 1955,
forced to reopen 1956, closed 1958 following new legislation; part later reopened as the
Bluebell Railway). A variation was a penalty for non-completion: the Surrey and Sussex line
(Croydon-Groombridge), abandoned in the late 1860s, is an example. However, neither
seems to have been at all common, and do not, I think, invalidate my analogy.

11 There had been earlier discussions on making it permanent which did not lead anywhere, in
1885 and 1894: see file 3711/85 in TNA PRO T1/8160B and file 12778/94 in T1/8851B.

12 These developments are studied in detail in Richard Oliver, *The Ordnance Survey in the
nineteenth century: maps, money and the growth of government* (in preparation for publication by the Charles Close Society).
powers expired, another Act had to be sought. The survey of northern Britain moved forward a good deal slower than did that of any railway. The basic standard scale of the survey changed in 1853-4, with the six-inch giving place to 1:2500, and in 1863 the resurvey of England and Wales south of the Mersey and the Humber was authorised. The remapping of southern Britain was completed in 1888, and those cultivated areas only mapped at six-inch before 1855 were remapped at 1:2500 between 1887 and 1896. From about 1894 the main activity of the Ordnance Survey in Britain was revision rather than survey or resurvey.\textsuperscript{13}

In 1840 Colby evidently envisaged that a steady stream of funding would enable the six-inch mapping of northern Britain to proceed expeditiously: this perhaps explains why, unlike in Ireland, the powers of the 1841 Act were in effect temporary. Expedition was thwarted by a squeeze on public spending, and by there being proportionately far more urban areas to be mapped than there had been in Ireland. In Ireland larger towns had been mapped at, mostly, 1:1056, as an aid to the valuers, and this scale was duly adopted, without any specific authority, for towns of over 4000 population in northern Britain: when the Ordnance and the Treasury learnt of what was going on, they were effectively presented with a \textit{fait accompli}.\textsuperscript{14} Both large-scale urban survey and detailed boundary recording were practices that had been developed in Ireland, and came to Britain with the largely Irish workforce. Continuing pressures from the Treasury for economy on the one hand and from frustrated would-be map-users on the other led to the adoption of the 1:2500 in the mid 1850s, on the basis that it was more cost-effective than was the six-inch. The boundary-recording function went unmentioned in the debate of the 1850s known as ‘the Battle of the Scales’.

The tension between the Treasury and the would-be users continued after 1863. The latter got the upper hand, and more money for the Survey, in 1868, on the back of fears for coal supplies and the need for large-scale OS mapping for mineral exploration. The users were successful again in 1880, now on the back of anticipated general land registration. For some years after 1880 there was a substantial increase in Survey output in Britain: whilst this was largely due to increased funding, it was also helped by efficiency developments. A well-known example is the replacement of engraving by photo-zincography for the production of the six-inch: less well-known is a rationalisation in boundary recording of 1878-9, to which we shall return later. After 1886 the Treasury asserted itself, and steady funding from 1894 onwards was at the expense of dropping the mapping of urban areas at larger than 1:2500. In sum, the Treasury regarded the Ordnance Survey as more of a national nuisance than a national asset.

To return to the 1840s: whereas in Ireland the preliminary research into boundaries had been made by the valuation department, in northern Britain this work fell upon the Ordnance surveyors. At first it was undertaken by the Royal

\textsuperscript{13} It often seems to be overlooked that the main work of the Ordnance Survey as a whole between about 1893 and 1912 was the 1:2500 remapping of Ireland.

\textsuperscript{14} See TNA PRO WO 44/702 for papers both on funding and on urban survey.
Engineer officers in charge of local divisions, but this proved unsatisfactory, and in 1849 a separate department for boundary work in England was formed, based in London. The boundary department had the advantage of being both a centre of expertise and of being able to use the tithe surveys of 1836-50 as a starting point. There were no tithe surveys in Scotland, which was one reason for the greater pressure from that country for the Ordnance Survey, but Scottish boundaries were much more straightforward, and continued to be ascertained by division officers, with reference to London only in difficult cases. The separate boundary office was disbanded in 1893, and a few staff at Southampton – ten before 1914 – were sufficient to handle any work arising from changed boundaries that could not be undertaken by local divisions.

The pressure between 1875 and 1888 to complete the 1:2500 coincided with a campaign for the rationalisation of administrative boundaries, particularly in England and Wales. This was largely effected by Acts passed in 1876 and 1882 which were aimed at getting rid of detached areas, and by Local Government Acts of 1888 and 1894 which created county, parish, and urban and rural district councils. This campaign was not completely successful, and near-complete rationalisation had to await a further Local Government Act in 1929, but by 1900 there was a much simpler pattern of local administration than there had been in 1875. It is worth pointing out that this rationalisation was put in hand at a time when the OS boundary survey, using the powers in the 1841 Act, had only covered about half of England and Wales, and indeed the OS worked closely with the Local Government Board in the 1880s to ensure that, as far as possible, boundary rationalisations took place in advance of detail survey. Thus the Ordnance Survey did not record the full complexity of boundaries as they had existed before 1876.

Although by the late 1880s the initial topographic and boundary survey was substantially complete, the mapping was still not being put to as much use as it might have been: the prospect of comprehensive land registration had receded. In his report for 1888 the then Director, Colonel Sir Charles Wilson, wrote that further legislation was desirable if the mapping was to be put to full use: he particularly instanced legal recognition for the boundaries mapped by the Survey in Britain.

'It seems most desirable, in the public interest, that the arrangements in Great

15 James to Potter, 15 April 1871: copy in TNA PRO OS 1/2/1.
18 See file 19540/84 in TNA PRO T1/8138A.
Britain as regards boundaries, should be assimilated to those in Ireland... the boundaries... ascertained under the important powers granted for the purposes of the survey should have legal recognition as rating and administrative boundaries.'

No doubt: but nothing happened, and a successor, Brigadier Winterbotham, wrote in 1934 that as the boundaries had no legal standing questions were very occasionally raised as to their status. The OS did maintain from 1895 onwards a manuscript record, on current one-inch and six-inch sheets, of boundary changes that had taken place since the latest edition of each sheet had been published, and a set of these was available for public inspection in London, but with restrictions on copying. This appears to have been a matter of public convenience, a political expediency, rather than any statutory duty.

The twentieth century and the emergence of the Survey Act myth

After 1914 the OS was subjected to severe funding constraints, and the boundary section shrank at one stage to a strength of only three, though the results of the 1929 Local Government Act forced a substantial increase in 1933. It was in these circumstances that the exasperated but publicly tactful Director, Winterbotham, wrote his combination of user's manual and propaganda, The national plans. Of boundary mapping he wrote that, unlike in Ireland, the boundaries shown by the Survey in Britain had no legal recognition: rather, ‘for the convenience of Government Department, local authority, and individual alike, the plan must show administrative boundaries’. ‘Convenience’, not ‘obligation’, be it noted. Widespread dissatisfaction with OS funding and the arrears of large-scale revision led to the appointment of a Departmental Committee in 1935, chaired by J C C (later Viscount) Davidson. The Committee issued its final report in 1938: as in the debates of the 1850s, boundaries went unmentioned.

It is evident that, whatever ‘the convenience of Government Department, local authority, and individual’, there was no belief in the inter-war period that the Ordnance Survey had any statutory duty under the 1841 Act to record boundaries. Nor was anything made of the boundary-recording function in the first post-war

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20 Report... Ordnance Survey... 1888, BPP (HC) 1889 [C.5659], LX, 911, pp 6, 7.
21 Winterbotham, The national plans, 52.
22 Report... Ordnance Survey... 1896, BPP (HC) 1896 [C.8157], LXVIII, 463, p.17; rules re map inspection, 25 October 1905 and 1 November 1907, in TNA PRO OS 3/336. The six-inch sheets were presumably copies of the ‘boundary record maps’ now in TNA PRO OS 40 and OS 41.
23 Winterbotham, The national plans, 56.
24 Winterbotham, The national plans, 52.
25 The circumstances of the Davidson Committee’s appointment have as yet not been fully explored, probably not least because of a lack of obvious surviving material at TNA: there is no mention in Robert Rhodes James, Memoirs of a Conservative: J C C Davidson’s memoirs and papers, 1910-37, London: Weidenfield & Nicolson, 1969. I find it suggestive that Davidson’s reputation seems to rest on his being Stanley Baldwin’s hit-man.
26 Final report of the Departmental Committee on the Ordnance Survey, London: HMSO, 1938, 32 has a bald mention of the 1841 Act in the chronology, but no indication of why it should be worth the honour.
edition of *A description of the Ordnance Survey large scale plans*, issued in 1947:

‘The boundaries shown on the 25-inch plan are, in the main, those which are visible to the eye on the surface of the ground. No attention is paid to property boundaries whatsoever… Administrative boundaries… are, however, shown in their correct positions, whether or not they lie along the visible boundaries.’

However, the idea of a supposed obligation under the 1841 Act had emerged in 1946 in, interestingly, a discussion of recording tidelines on the large-scale resurvey then getting under way. The question of legal obligation was raised at a Director-General’s conference of officers on 16 August, and the officer to whom it was referred reported that:

‘By the Ordnance Survey Act 1841, para 1, Justices of the Peace were required to appoint meresmen to assist the Master General and Board of Ordnance in “examining, ascertaining and marking out the reputed boundaries of each County, City, Borough, Town, Parish, etc.”’

As the extracts from the Act in Appendix 1 show, there was no mention that the justices were only obliged to act thus when applied to by the Ordnance. Investigation of methods of surveying tidelines went ahead, on this misunderstanding of a legal requirement, bolstered by the extension of parochiality to low water by the Poor Law Amendment Act of 1868 and the consequent use of this mark for defining the acreages of parishes, which were being used both by local authorities and by Boundary Commissioners.

By 1951 the doctrine of a statutory obligation on the Ordnance Survey was taking a hold. A mild form was stated in an internal manual, *Administrative boundaries in Great Britain 1951*:

‘Under the provisions of 4th & 5th Victoria Cap.XXX, usually referred to as the Ordnance Survey Act, the responsibility for ascertaining and recording public boundaries in Great Britain and the Isle of Man was placed upon the Master General and Board of Ordnance, now the Director General of the Ordnance Survey. Since then the Department has surveyed all rating and voting boundaries…’

At the same time the Director of Establishment and Finance, F G C Bentley, wrote that

‘If any specific legal obligation had been imposed on the Ordnance Survey in this connection I am quite sure that we should have been aware of it. I th[ink,] therefore, that it can be safely assumed that our responsibility in this matter starts and finishes with the Survey Act of 1841. Section I of this Act imposes the task of completing the Survey and marking out the reputed boundaries of each county, city, borough, etc.…’

Bentley’s suggestion that the point be confirmed by legal advice was not


28 A/OLD to DG through OLS, 29 August 1946: item 0A in TNA PRO OS 1/561.

29 *Administrative boundaries in Great Britain 1951*, 5: copies at British Library Maps 207.aaa.14, and TNA PRO OS 45/52 and OS 45/98.
The new doctrine was stated for restricted circulation in two policy papers drafted in 1951-2, and in public in the 1954 edition of *A description of the Ordnance Survey large scale plans*: ‘The Ordnance Survey is required by the Ordnance Survey Act of 1841 to ascertain and mark out public boundaries in Great Britain and the Isle of Man. Private property boundaries, as such are not surveyed or recorded by the department.’ [sic] Yet the 1955 edition of *A description of Ordnance Survey medium scale maps* used wording similar to the 1947 large-scale *Description*.

Thereafter the obligation under the 1841 Act was the official line, frequently repeated where both Survey staff and the public would see it, but it did not pass unquestioned in discussions of OS policy. In May 1966 the Deputy Director, Large Scales, wrote that ‘There is a statutory obligation to provide civil parish boundaries for Great Britain at a scale of at least One-inch to one mile’, but this was questioned by the Director-General, Major-General A H Dowson who asked for ‘chapter and verse’ on any statutory requirements. A subsequent investigation showed that Orders in Council and Statutory Instruments habitually required the OS to mere new boundary, but the Solicitor’s Department of the OS’s superintending ministry, Housing and Local Government, wrote bluntly ‘I find no requirement on Ordnance Survey in the Act of 1841’. This might have been thought conclusive, but the revisers of the relevant Policy Paper instead took refuge in dubious authorities, including papers presumed to have been destroyed by enemy action in 1940, the Departmental Committee of 1892, Close’s *The early years of the Ordnance Survey* and Winterbotham’s *The National Plans*: it is unclear which passages in these works were supposed to provide support. ‘All accepted that these instructions were mandatory. No actual file records now exist.’ The eventual solution was a doctrine of ‘indirect obligation’:

‘Statutory Requirements are the duties defined by Statute and the action is prescribed, e.g. boundaries must be ascertained and marked out. Statutory Obligations are those actions which, although not prescribed, are made

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30 DEF to DFS, 1 September 1951, minute 62 in TNA PRO OS 1/561.
33 These discussions took place in ‘Policy Paper’ files, now in TNA PRO class OS 11. Under the ‘thirty year rule’ most of these files only became available from the late 1990s onwards, which explains their apparent neglect in earlier writings. For a brief discussion of the policy paper system see W A Seymour (ed), *A history of the Ordnance Survey*, Folkestone: Dawson, 1980, 299.
34 DDLs to DMP, pp DG to DDSS (as DMP), and extract from DG’s Conference 483, 2 and 17 May 1966, minutes 94, 96 and 97 in TNA PRO OS 11/47.
necessary by the requirement, e.g. an Ordnance Map is prescribed in certain statutes or orders as being necessary. The boundaries on this must be shown at that scale – hence the indirect obligation.’

None of this affected public pronouncements, which enunciated an uncomplicated obligation: these included the *Descriptive manual* of 1975, the report of the Serpell review committee in 1979, and a manual of boundary-making that was perhaps more remarkable for erudition than sustained interest. And it duly appeared in 1988 in an article in *OS News* that was reprinted in *Sheetlines*, which drew forth a brief note from the present writer. After that the claim of an obligation disappeared as markedly as it had arisen nearly forty years earlier. In the popular history of the OS issued in 1992 the section on the Survey Act is admirably objective.

Thus the myth that there is any obligation under the 1841 Act for the Ordnance Survey to survey boundaries is seen to be a comparatively recent development, sanctioned neither by attention to the wording of the Act, nor by the history of the Survey in the first century after the Act’s passage. It is possible that the mistaken belief in such an obligation accounts for the obligation in two statutory instruments, of 1976 and 1977, whereby the OS is required to mere boundary created by those instruments: a department for which there is no statutory provision or founding charter is obliged to record isolated lengths of boundary!

Although there appears to have been no legislation conferring formal legal recognition on Ordnance Survey depiction of boundaries, two judgements, in 1939 and 1957, ruled that what was shown on an OS map was *prima facie* evidence of existence on the ground. Although both judgements concerned the limits of landed property, the principle was extended to the depiction of administrative boundaries.

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38 Simmonds, ‘Boundaries: some recent developments …’; Oliver, ‘The Ordnance Survey Act, 1841’. The writer’s recollection is that he communicated directly with OS on the point, but he cannot find any trace of this in his files.


40 SI 1976/246 [regulation 6], SI 1977/8 (S.1) [regulation 3].

41 The two cases which established this were Fisher *v.* Winch, 1939, 2 All ER 144 (Ct of Appeal 1939 1 KB 666), and Davey *v.* Harrow Corporation, 1957, 2 All ER 305. See also Harley, *Ordnance Survey maps: a descriptive manual*, 39.
The adoption of ‘ordinary’ tides

The quotation above from the 1947 *Description* demonstrates a long-standing Ordnance Survey policy of confining itself to recording physical facts: administrative boundaries, at any rate when not having the limited visibility of permanent posts or stones, were a special exception to this. Colby’s instruction of 1825 to record everything attached to the ground was extended in spirit to northern England in the 1840s to include every possible public boundary. Parishes were often divided into townships (sometimes called hamlets), and these in turn might be further divided. The recording of these divisions of townships was abandoned in 1854. (In Scotland there were no divisions of parishes.) Whatever their status, both in Ireland and at first in Britain boundaries were only shown above high water mark. By the early 1850s parish and hundred, but not township, boundaries extending across the foreshore were being shown on the six-inch mapping of Yorkshire; this may possibly reflect a provision in an Act of 1832 determining boundaries for Parliamentary purposes, that ‘the sea’ should be determined by ‘the Low-water Mark’. It is unclear how high and low water marks were defined on the one-inch mapping surveyed before 1841, or on the Irish six-inch townland survey. On the earliest six-inch mapping of Britain, of Lancashire, the treatment of tidelines varies. Low water mark is invariably not described: high water mark is occasionally not described, or described as ‘ordinary’, and on some sheets both ‘ordinary’ and spring high water marks are described, but by the late 1840s in Britain high and low water of ‘ordinary spring tides’ were being recorded. The ‘springs’ were presumably adopted on the grounds that they represented normal physical limits: already in Ireland ‘Liable to Floods’ had appeared, implying exceptional inundation, and no doubt the survey of high water springs was facilitated by indications such as the extent of vegetation. Tides were an awkward exception to the general OS tendency to present a static, frozen, view: the adoption of springs was perhaps seen as making the best of a bad job. In Scotland spring tidelines were recognised by ancient custom as indicating property rights.

The change in OS usage from spring to ‘ordinary’ tides in England and Wales came in 1868. On the face of it, it is not entirely clear what occasioned this. A straightforward answer might be that it was a consequence of the Poor Law Amendment Act of that year, which included a provision for ‘parochialising’ the foreshore. If so, the OS’s reaction was a strange, even perverse one: it changed its definition of high and low water mark, but it did not extend the boundaries.

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42 Note that ‘hamlet’ has a precise meaning, distinct from the more recent popular use of it for a small settlement. An analogous corruption of a precise term is ‘main road’, which has a precise meaning under the Highways and Locomotives (Amendment) Act, 1878 41 & 42 Vict., ch.77, s.13.

43 Winterbotham, *The national plans*, 97. I know of no other record of this decision – other than, of course, the evidence of the published maps: divisions of townships appear throughout Lancashire and Yorkshire, and in the north-east and south-east parts of Durham.

44 See, for example, Yorkshire sheet 238A. Act 2 & 3 William IV, s.36(10).

45 Poor Law Amendment Act, 31 & 31 Vict., C.122, s.27.
across the foreshore. Neither this Act nor the Territorial Waters Jurisdiction Act, 1878, defined what ‘low water mark’ might be. Setting aside the difficulty that the boundaries across the foreshore were not mapped, the decision to adopt ‘ordinary’ high and low water, which in fact was based on property, as discussed below, would seem to be accounted for the practical purpose behind the ‘parochialising’ the foreshore, of bringing all landed property within the scope of rating. An argument used around 1862-3 for the resurvey of southern Britain at 1:2500 was the potential use of such mapping in local rating valuation work, though in 1888 Wilson complained that in practice little such use was actually made of the maps. At first after 1868 low water mark was not annotated as ‘ordinary’, unlike high water: evidently it was assumed, and it was only after 1878 that an explicit description of ‘ordinary’ was added.

Parish boundaries were only comprehensively extended across the foreshore after 1878. Shortly after becoming Director in August 1878 Cooke convened a committee of officers to consider boundaries: one result of their deliberations was the adoption of ‘civil parishes’ in place of ecclesiastical or mother parishes and townships and the discontinuing of mapping hundred boundaries, and another was the extension of boundaries across the foreshore. The decision to adopt civil parishes and omit hundred boundaries has hitherto been attributed to a Treasury decision, but reference was only made to the Treasury by the Office of Works, which had departmental responsibility for the Survey, for reasons of uncertainty of jurisdiction. No such reference is recorded for defining the foreshore.

The definition of foreshore that was used in England and Wales from 1868 onwards, being adopted for purposes of property, was based on a definition of the foreshore from a property point of view by Lord Chief Justice Cranworth in 1854, in the case Attorney-General v. Chambers. This case concerned mineral rights under the foreshore near Llanelli, in south Wales. The judgement was influenced by the opinion of the seventeenth century jurist, Sir Matthew Hale, and was to the effect that the limits of the foreshore, and therefore of Crown interest, were the average of tides, on the basis that the areas above the average high and low water marks were respectively covered or exposed less often than those lying between the two averages. As the limit of property represented the limit of rateable land, it was no doubt logical in 1868 to use the property principle to determine the limit of rateable areas.

46 Territorial Waters Jurisdiction Act, 1878, 41 & 42 Vict. C.73, s.7, where there is reference to ‘any part of the open sea within one marine league of the coast measured from low-water mark’.

47 An example of arguing for parochial assessment use is in James to Verney, 13 March 1862, in group 4263 in file 17170 in TNA PRO T1/6451B; Report... Ordnance Survey... 1888, BPP (HC) 1889 [c.5659], LX, 911, p.6.

48 For the Committee: Winterbotham, The national plans, 53. For the civil parishes and hundreds see TNA PRO OS 1/9/3 and T1/15938, especial Noel to Works, 22 March 1879. For a straightforward attribution to the Treasury see Booth, Public boundaries, 355.

49 AG v. Chambers 1854, 4 De G M & G 206, 43 Eng. Rep. 486 (1854); this can be ‘translated’ as The English Reports, XLIII, Chancery XXII containing De Gex, MacNaughten & Gordon, Volumes 3 to 6, Edinburgh: Blackwood and London: Stevens, 1904, 486-90.
Therefore, the definition of the foreshore in terms of property rather than physically was an exception to the usual OS practice of ignoring property boundaries. It could only be defended on the basis of the mapping having a cadastral function, and though the Ordnance Survey Act of 1841 provided that nothing done under it should affect property rights or claims, nonetheless the determining of ‘ordinary’ tidelines had the effect of defining the limits of crown and non-crown property and rights. From the point of view of many map users it was inconvenient, as a line of ‘ordinary’, ‘medium’ or ‘mean’ tides is often hard to identify on the ground, and even on a markedly sloping beach there may be a considerable difference in the position of neap and spring lines. (See figures 1 to 5, showing Spurn Head in Yorkshire.) The new definition was used for all new survey work after 1868, and for revising pre-1868 surveys when national revision began in 1891. The resulting inconsistency seriously devalued Ordnance Survey evidence to the Royal Commission on Coast Erosion of 1906-9. It is unfortunate from the point of view of both the continuity of the physical record and the principle of recording what is physically evident on the ground that the OS did not continue to record spring tidelines, and treat the ‘ordinary’, ‘mean’ or ‘medium’ line as, in effect, an invisible boundary but, given funding constraints, unsurprising.

Figure 1. Extract from 1:2500 sheet TA 4011/4111, surveyed November 1970, published 1971, showing lighthouses at Spurn Head, East Riding of Yorkshire. Annotations refer to figures 2 to 4: ‘A’ is the former low lighthouse, built in 1852. The Lifeboat Cottages were demolished in 1975.
Appendix 1: Extracts from Ordnance Survey Act, 4 & 5 Victoria, cap. 30

I – ‘Whereas several Counties in that Part of Great Britain called England have been surveyed by Officers appointed by the Master General and Board of Ordnance, and it is expedient that general Surveys and Maps of England, Scotland, Berwick upon Tweed, and of the Isle of Man, should be made and completed by Officers in like Manner appointed; and that the Boundaries of the several counties in England and Scotland, and of Berwick upon Tweed and of the Isle of Man, should be ascertained and marked out: Be it therefore enacted… That from and after the passing of this Act, for the Purpose of enabling the Master General and Board of Ordnance to make and complete such Surveys and Maps of England, Scotland, Berwick upon Tweed, and the Isle of Man, in manner aforesaid, it shall and may be lawful for the Justices assembled at any Quarter Sessions … upon the Application in Writing of any Officer appointed by the Master General and Board of Ordnance for the Purposes of this Act … to nominate and appoint One or more fit and proper Person or Persons to aid and assist, when required, any Officer appointed as aforesaid in examining, ascertaining, and marking out the reputed Boundaries of each County, City, Borough, Town, Parish, Burghs Royal, Parliamentary Burghs, Burghs of Regality and Barony, extra-parochial and other Places, Districts, and Divisions, in England, Scotland, Berwick upon Tweed, and the Isle of Man; and such Person shall from Time to Time act under and obey such Directions as he shall receive from the Officer or other Person appointed by the Master General and Board of Ordnance to make such Surveys and Maps as aforesaid…’

II – ‘…for the Execution of the Purposes of this Act it shall and may be lawful for… any Officer or Person appointed by or acting under the Orders of the Master General and Board of Ordnance… to enter into and upon any Estate or Property of any County, or of any Body Politic or Corporate, Ecclesiastical or Civil, and into and upon any Land, Ground, or Heritages of any Person or Persons whomsoever, for the Purpose of making and carrying on any Survey authorized by this Act, or by the Order of the Master General and Board of Ordnance, and for the purpose of fixing any Mark or Object to be used in the Survey, or any Post, Stone, or Boundary Mark whatsoever…’

XII – ‘… this present Act, or any Clause, Matter or Thing herein contained, shall not extend, or be deemed or be construed to extend, to ascertain, define, alter, enlarge, increase, or in any way to affect, any Boundary or Boundaries of any County, City, Borough, Town, Parish, Burghs Royal, Parliamentary Burghs, Burghs of Regality and Barony, extra-parochial and other Places, Districts, and Divisions, by whatsoever Denomination the same shall be respectively known or called, nor the Boundary or Boundaries of any Land or Property, with relation to any Owner or Owners, or Claimant or Claimants of any such Land respectively, nor to affect the Title of any such Owner or Owners, or Claimant or Claimants respectively, in or to or with respect to any such Lands or Property, but that all Right and Title of any Owner or Claimant of any Land or Property whatever within any Hundred, Parish, or other Division or Place whatever, shall remain to all Intents and Purposes in like State and Condition as if this Act had not been passed…’
Appendix 2: Tidelines in Lancashire, surveyed 1842-8

High Water Springs only: sheets 6, 11, 13, 16, 84 (upper limit on River Douglas), 90, 105

High Water Springs with also some indication of ‘Ordinary’ High Water Mark: sheets 12, 15, 17, 21, 22, 27, 28, 30 (upper limit on River Lune is of ‘ordinary’ tide), 34, 38, 39, 43, 60, 113, 114 (Springs on Cheshire side only), 115 (Springs on Lancashire side only), 118 (ditto)

High Water Springs with also some indication of ‘Ordinary’ High Water Mark in part, unspecified in part: sheets 67 (undescribed on north side), 68 (ditto), 75

High Water Springs in part, unspecified High Water in part: sheet 18 (Springs in Westmorland)

Ordinary High Water in part, not specified elsewhere: sheets 29, 33

Ordinary High Water only: sheets 61, 99, 117

Not specified: sheets 24, 37, 42, 44, 50, 51, 58, 59, 74, 82, 98, 116

Figure 2. Looking from south of point ‘B’ on Figure 1 northwards, at equinocail High Water Springs on 24 September 1991. Observe tide-line at point ‘D’. [© Richard Oliver: R.95/17A]

Figure 3. Looking north from point ‘C’ on Figure 1, at neap tide, 13:30 GMT on 22 July 1995. Observe tide-line at point ‘D’. [© Richard Oliver: R.136/17A]
New member John Harmer is organising a map exhibition at Bexhill library in early September, possibly with out-of-hours viewing for CCS members. Anyone interested in visiting should contact John on 01424 773998 or john@barmerfamily.plus.com

Next year’s AGM will be held in Lincoln on Saturday 12 May 2012.
**Regular revision**

*John Cole*

In *Sheetlines* 47 I carried out a brief examination of the eleven First Series Regular 1:25,000 maps of the area north and east of Plymouth, whilst in *Sheetlines* 69 I attempted a comparison of changes between the A and very early B editions (except in the cases of SX45 and SX55 which were effectively B2s reprinted in 1967 and 1972 respectively).

In the first article I quoted the survey/revision dates of the 1:1250, 1:2500 and 1:10,560 maps from which the series was derived, but not those of individual sheets. Whilst in the case of SX54 (1949-51), SX56 (1950-52) and SX57 (1950-52) these are indeed the correct revision dates, the compilation diagram of the other eight maps simply gives the publication date of the six-inch map.

In spotting the differences I missed plenty of minor changes (added post offices and public telephones on all except SX66, for example) and several of significance. The most obvious ones were: deletion of reservoir names at Burrator (SX56) and Venford (SX67) and the annotation *dam* at the latter. The two *dam* annotations at Burrator were retained and the dam annotated at the new reservoir on the B edition of SX66.

Major changes to the River Tavy, which indeed show up on the one-inch map revised 1957-8, appear on the B edition of SX46 at 4764, 4765 and 4766. At least five new schools were noted on SX45 though not all had been built by the date of the original B edition.

The positional alteration of (P) underneath the village name Aveton Gifford was noted on SX64 A edition; similarly at Walkhampton on SX56. This simply indicated that there was a post office in the village and was properly positioned on the B edition.

I still haven’t discovered an explanation for the provisional marsh symbol on SX57 A and B editions, nor the provisional coniferous and non-coniferous trees mixed with the regular in the north-west corner of the B edition only of SX64.

*Regular tree symbols in Wrinkle Wood, with provisional symbols in adjoining Furzedown Wood, in square 6247 of SX64*
Provisional marsh symbols on SX57 square 5674 (left), regular marsh on SX64 square 6248 (right).

 SX5674
 Entrance to Yellowmeade farm looking south to Leeden Tor
 [photo ©Martin Boardman]

 SX6248
 Erme estuary looking upstream
 [photo ©Derek Harper]

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**The haven of rest and the Imperial Geographical Service**

*Mike Nolan*

In 1906 the organisation of the Royal Engineers was the subject of a special committee. One of its many duties was to consider the provision of sufficient maps of the theatre of war, and of the organisation and training of a staff for this purpose. In its report, it introduced this subject by stating that:

‘It is unnecessary to dwell upon the importance of this subject, if the dissatisfaction expressed by the Houses of Parliament, and by the public, at the preventable loss of life, caused by insufficient and faulty maps in the Boer and previous wars (due to insufficiency of funds, although the necessity was urged by the Director of Military Intelligence), be recalled.’

Before commencing its work, it considered a ‘Memorandum on the Employment of Royal Engineer Officers on the Ordnance Survey’ submitted by Col G Barker, CB, RE Inspector of Royal Engineers. In this memorandum Col Barker considered (1) The Headquarters of the Ordnance Survey and (2) The Ordnance Survey Divisions, at that time eleven in number at Carlisle, Clifton, Derby, Edinburgh, Redhill, Shrewsbury, York, in Great Britain and Belfast, Cork, Dublin and Ennis, in Ireland.

‘The work of an Ordnance Survey Division consists almost entirely in producing, or revising, large scale plans. The system has been carefully elaborated, and, as a result, an Officer finds himself in charge of a machine which almost works by itself. There is very little scope for initiative, but a certain amount of business capacity is required. The technical knowledge gained is of no value for military or geographical purposes. From 6 to 10 days a month are spent in inspecting the men in the field, and in examining plans. The office work takes, perhaps, 6 days a month. There is hardly enough work for an energetic young Officer.

Officers on such employment are very much out of touch with the Army, and tend to lose sight of the fact that they are soldiers, and are only employed on the Survey for the ultimate (supposed) benefit of the Service.

Of course some Officers manage to keep up their military knowledge, but these are the exceptions *, in fact, an Ordnance Survey Division is a haven of rest much sought after by young married men.

* It should be mentioned that eight Officers were sent to the South African war from the Ordnance Survey, and that some of these, e.g., Colonel H M Jackson, Major Brooker, Major Hedley, and Captain Crookshank, did conspicuously good work in command of various units, or on the Staff.’

The headquarters work of the Ordnance Survey consisted of administration, trigonometrical work, instructions and training of Field Survey Sections, map reproduction, revision of the one-inch and small scale maps and the technical superintendence of the surveys and explorations of the protectorates and colonies in tropical Africa. All this work was useful to the service and good for the officers employed on it, whom he considered should be officers on the active list, such work being in their hands in nearly all the civilised states.
For the tropical protectorates in Africa, it had been arranged between the War Office and the Colonial Office, with the concurrence of the Board of Agriculture, that the OS should be the technical headquarters of these surveys. It was intended to employ officers in charge of these surveys, such work being invaluable since it tended to cultivate and expand those qualities most required by a soldier and to keep him in vigour both in mind and body and gave him experience in the organisation and conduct of expeditions. Officers while so employed would not be on the strength of the OS but a free exchange of officers between HQ and overseas duties would be beneficial.

In considering the NCOs and men he stated that the great advantage of the present organisation was that good topographers could be found for the Field Survey Sections, the Colonial Survey Section and for special expeditions by rigorous selection from the pool of surveyors.

However, he considered that the Field Survey Companies, which were available as general service units in time of war, were inadequately trained for such duties. They should be put through annual fieldworks and musketry courses.

‘The intelligence of the men is high, but as artisans and tradesmen they are necessarily inferior to men who are constantly employed at their trades.’

He recommended that the companies be reduced to three in number and that half the regimental and the whole of the Survey pay should be borne by civil votes. Three Field Survey Sections should be kept trained, as also should a reserve of topographers for expeditions.

Considering that the word Ordnance now had no meaning, he recommended that the Ordnance Survey should be re-named The Imperial Geographical Service, and be divided into two branches, the Headquarters and Geographical branch and the Cadastral branch.

The officer strength should remain at 22, eleven in each branch. The eleven officers in the Cadastral branch should be retired officers in charge of the eleven Divisions. Retired officers might be offered £300 a year in addition to their retired pay, this representing a saving to the Treasury of £1600 per annum. This proposal would free eleven officers for other corps duties.

The eleven officers in the Headquarters and Geographical branch, of whom five should be field officers, should be on the active list. No officer should be posted to it who has not had geographical experience, and appointments should be made with the concurrence of the Director of Military Operations.

The committee first addressed the reasons why the OS was retained as a military department. It noted that although the Board of Agriculture had consented to defray the pay of those officers not posted to Survey Companies, and were in favour of extending the principle to the remaining military staff, the pensions of both officers and men were borne by army votes. It had to consider if the four main advantages of retaining the OS as a semi-military department outweighed the cost to army votes.

It recognised that in the Field Survey Sections, four of which had been employed in the Boer War, there was a skilled body of topographical surveyors chosen by selection and resulting in a high degree of efficiency. Were they not
available from the Survey Companies they would have to be found from depot recruits with a deterioration in efficiency.

It recognised that precedence was given to War Office work and that it was provided with maps, a large number specially produced for the Directorate of Military operations, amounting to between £9000 and £10,000 per annum. Also, in the event of a great war, the War Office had no adequate establishment or plant but ten machine presses were available for this work at the OS To rely on a purely civil department for such work could not be justified

Under the present situation military maps of the UK were kept up to date.

In an emergency the whole of the Survey Companies were available for general service in the Field Army.

They concluded that the advantages to the War Office obtained by the semi-military organisation of the OS were great and the present organisation should be retained, but that efficiency could be obtained with the loss of one company. The three companies should each consist of three officers and 90 NCOs and men. It considered it just that at least half the regimental pay of the military staff should be defrayed by the Board of Agriculture since the pension costs were wholly borne by the War Office.

1st Field Survey Section 1890, by kind permission of OS Library
Beyond the OS, seven to nine officers were employed in the Topographical Section, General Staff, and two officers and four NCOs were employed in the Colonial Survey Section, the cost of which was normally borne equally by the War Office and colony concerned. In considering the preparation of maps for war, the committee considered that in view of the experiences of the Boer War, at least three Colonial Survey Sections should be established, each section should be increased to two officers and eight NCOs, and the costs should be borne by army votes.

The committee additionally considered surveys of tropical colonies, noting that a scheme was being arranged for qualified officers to be lent by the War Office to the Colonial Office for colonial surveys. On average, six officers were being placed each year at the disposal of the FO and CO for International Boundary Commissions, the costs being borne by the office concerned. The committee supported such employment.

The committee tabulated the recommended officer organisation:

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<td>Ditto, proposed additional</td>
<td></td>
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<td>4</td>
<td>4</td>
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<tr>
<td>Totals</td>
<td>19</td>
<td>9</td>
<td>36</td>
<td>64</td>
<td>30</td>
</tr>
</tbody>
</table>

* maximum.
** eleven to be retired officers.

The committee considered separately lithographic and printing sections. These being very small specialist units, the committee considered that their peace strength, excluding drivers, should be the same as their war strength, and that they should be concentrated at the SME, units being formed as necessary for manoeuvres, for field training and practice of the staff in their employment. They recommended four lithographic sections each of three sappers and four printing sections, each of two sappers.
Among the collections donated to the archive recently are some technical and instructional items left by Albert Eades (1910-1992). Bert Eades, as he was known, joined the Ordnance Survey at London Road, Southampton in 1935, where his basic training as a surveyor and early service took place. He was posted on continuous revision to Beeston, Nottinghamshire in 1938, moving to Hayes, Middlesex and Hythe, Kent before going on to war service in the Royal Engineers. Most of this was spent in the Survey Training Centre R.E. after its move to Wynnystay Park, Ruabon in North Wales in January 1941.

Quite a number of artists seem to have been posted at this time to Ruabon, perhaps for their drawing ability. One of them was M Hunter, who in 1945 executed in pastel the accompanying portrait of Bert Eades, which we reproduce here by kind permission of his son and daughter. Their investigations into Hunter have so far proved fruitless, and if any reader can help them to learn more about this talented artist, please let us know via the editor.

Bert Eades returned to London Road, Southampton after the war, where he became a Survey Instructor. In 1955 he went as a Surveyor Grade III to Cosham, and in 1958 to the Berkshire Field Office in Reading, where he remained until his retirement in 1973 as a Surveyor Grade IV in a disestablished capacity. He was awarded the Imperial Service Medal in 1972.

Among the items given to the archive are several notebooks on levelling and field survey used by Eades both as an instructor and as a surveyor in the field. We have been able to add a number of 1946 printings (the earliest?) to our sets of ‘study notes’ and ‘notes for candidates for technical examination’ which seem to have been standard Ordnance Survey issue for nearly thirty years after the war – covering subjects such as geodetic control, map projections, levelling, triangulation, drawing and reproduction, both of large and small scales. We have also acquired a wartime printing of Notes on field survey, which is prefaced by an introductory message from the Director General, G Cheetham, written in November 1943: ‘To members of the Ordnance Survey who are at present prisoners of war’.

We are very grateful to Bert Eades’s family for so generously donating these items to our archive.

Roger Hellyer
Maps on the move

How would you like the entire OS mapping of Britain for two pounds? That’s all Explorer, all Landranger, 1:10,000 street maps and 1:125,000 road atlas, all for £1.99; in your pocket, on the move, wherever and whenever you need them. Too good to be true? Well, yes and no. Maybe the reality doesn’t quite live up to the promise, but it’s not far off. Welcome to the world of ‘apps’ – low-cost applications running on the latest mobile phones and personal organisers. We tested two apps running on different devices to discover whether you really can leave home without a trusty paper map in your pocket.

The devices
Our tests used an Apple iPod Touch and HTC Wildfire mobile phone. Both are slim, handy (about 10cm by 6cm), light (about 100 grams) and stylish. Both cost anything from zero to over £200, depending on the package deals and special offers of the various suppliers. The iPod is not a phone and is free of all call costs; you need a wireless broadband connection (wi-fi) to load it but not to use it. The HTC is a phone which also has GPS and compass; it connects to the internet via wi-fi or the mobile network.

The apps
Apps are available through iTunes App Store (Apple) or Android Market (for HTC and other devices running Google’s Android operating system). You can access these via your PC or direct from the device. On the HTC, we tested OS Atlas (£1.99); on the iPod, UK Map (£6.99). OS Atlas is indeed the full OS mapping as described above. UK Map offers small scale OS road atlases, plus hybrid 1:25,000 mapping and OS 1:10,000 street maps. The 1:25,000 is part derived from OS District mapping (less detailed than Explorer maps) with additional data from OpenStreetMap.org.1

Apart from the source of the mapping, the big difference between them is how the maps are loaded – and this has a huge impact on usability in the field. OS Atlas (on the HTC) loads each map tile one at a time, only when needed. For this, it requires access to the internet ‘on-the-go’. UK Map pre-loads the maps in advance, storing them on the iPod itself. So, as long as you remember to load the mapping you need before leaving home, it’s all there, instantly.

How do they perform?
The 1:50,000 and 1:25,000 mapping is superior in OS Atlas, but because of reliance on a live internet connection over the phone network, there can be a frustratingly long wait for the display to appear (and in our tests quite often a failure to appear at all). Battery life on both is a problem, most especially on the HTC if the GPS is enabled. UK Map requires an iPod Touch with at least 32Gb memory because maps are stored internally. The place-name search on OS Atlas is bizarre – if it finds more than one result, it automatically displays only the nearest. This may be appropriate if searching for a nearby burger bar, but not for place-names.

Verdict: Both excellent value, great fun to play with, but take your paper map too.

John Davies

1 See illustration on page 26 for example of UK Map screen display.
Professor John Andrews is best known as the first significant historian of the mapping of Ireland, but he has also published several articles of much wider import. His previous three monographs have been concerned with Ireland, starting with *A paper landscape: the Ordnance Survey in nineteenth century Ireland* (1975), but now he complements the wider vision of his map-philosophical articles with a whole book, as insightful as its predecessors, and decidedly heavier.¹

For some of us, anything by John Andrews is practically self-recommending, but there are three reasons why *Maps in those days* deserves consideration in these pages. One is that there has been nothing like it before; the second is that it puts earlier Ordnance Survey methods into a much wider context; and the third is that it suggests that there ought to be something corresponding for obsolete Ordnance Survey methods, which really means anything pre-digital.

The scope of the book is neatly encapsulated in the title: here you will find methods of surveying, drawing, engraving and much else neatly summarized. Technical descriptions as such are relatively few, and could be compressed into a much smaller compass, but they are set in a much wider context of examples of practical use and practical justification. Indeed, throughout Andrews is concerned with showing map-making as a *practical* activity; his view is that a map is a practical object of itself, rather than an elaborate social ‘construct’. The notes show a formidable level of erudition: in criticizing J B Harley’s approach, Andrews remarked that Harley ‘gives the impression of having spent a lifetime in a library where every book ever published can be seen on open access, and where an army of research assistants stands at the service of every reader’.² The reaction to *Maps in those days* must be much the same: the references seem exhaustive. Chapters cover ‘Map history miniaturised’, the growing preponderance of facts over theories, sketch-maps, strict measurement, the shape of the earth, measured survey by various methods, plotting of surveys, projections, types of map, marine charting, relief representation, names, copying (including engraving and lithography), map compilation, map publication, symbols, decoration and ‘Maps and society’, which pithily summarises the ‘Andrews view’.

There is no lack of references to the Ordnance Survey, and there are one or two unusual illustrations, such as a page from a contour-surveyors notebook on page 301. Some of the themes, such as sketch-mapping, are at best marginal to OS considerations, but others are fundamental, such as survey methods. Whereas often writers have tended to treat the national survey in a progressive manner, as deserving a chapter to itself at the end, here OS references and examples swim in

¹ The others are *Plantation acres* (1985), a study of land surveying, and *Shapes of Ireland* (1997), effectively a book-length history of Irish mapping. *A paper landscape* was reissued by Four Courts in 2002, but the other two are, alas, out of print.

and out. In a wider context, the Ordnance Survey furnishes examples, but it was not necessarily a universe of its own.

This brings me to the third point: the need for something similar devoted wholly to the methods of the Ordnance Surveys in these islands. The motivation for this is not to redress an imbalance; rather it is the need to record more recent processes before they are forgotten. The relatively transitory nature of many of these makes such a project timely, and probably urgent. Whereas engraving on copper was a standard technique employed from the late fifteenth century to the early twentieth century, scribing on first glass and then plastic—a means of preparing a ‘drawing’ that obviated both ink and the need for a camera in subsequent photographic processes—seems to have appeared no earlier than the 1930s, was adopted by the OS of Great Britain around 1955 (and rather later in Ireland) and was rendered completely obsolete by the late 1990s. Much the same might be said of the use of butt-jointed plates in surveying. The rise, use and fall of these methods need a monograph of their own.

*Maps in those days* can be warmly recommended. It is well produced and profusely illustrated; I suspect that digital processing has been used to enhance the clarity of many of the originals, and whilst the result occasionally appears a little ‘hard’, at least it is legible, no peering into half-tone gloom. Hitherto Andrews has fought shy of sub-headings within chapters, preferring a synopsis in the contents; now there are sub-headings, but the contents only has the chapter-headings, so that the book is not always as convenient for quick reference as some readers might like. But this is hardly a fatal flaw, and one that is easily forgiven in the sheer fluency of the writing. It reads easily, which means a lot of very hard work has gone into it.

*Richard Oliver*

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**Beck meets Wainwright**

Inspired by Harry Beck’s iconic tube map and Alfred Wainwright’s definitive set of guides to the Lake District fells, cartographer Peter Burgess has produced *Tubular Fells*, an A2 size poster map of Lakeland. Priced at £8.99, the map is on sale in various shops in Cumbria and from [www.TubularFells.com](http://www.TubularFells.com).

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3 As the late David Woodward pointed out a long time ago, scribing is really a version of ‘photo-writing’, which was a well-established technique by the 1880s: see D. Woodward, ‘A note on the history of scribing’, *Cartographic Journal* 3(2) (1966), 58.
Surrey Ordnance Survey Historical Maps, 25 inch to 1 Mile 5 CD-ROM set  
*Surrey History Centre, price £78.00 (incl VAT) + £2.40 p&p.*

Surrey County Libraries have produced this set of CD-ROMs which contains jpeg images of 2,267 individual County Series 25-inch maps for Surrey, from the initial 1861-71 survey to the incomplete fourth revision of 1940-44. Inevitably the collection is not complete – the Surrey website notes that they have acquired a number of maps since the CDs were compiled, in particular of the Spelthorne area. However from a brief check the omissions seem to be fairly few and far between. The coverage has not been limited to the present day county, so those sheets covering areas which subsequently became part of London are included.

It would appear that a few of the originals were not in pristine condition when scanned, although generally the quality is excellent. Some maps appear out of sequence, while a few have been scanned upside down. However if you copy these to your computer the image can then be rotated.

Each CD also contains a PDF file listing of all the maps in the set, which includes the main place names appearing on each sheet, thus allowing searching. This list is also available on the Surrey website ([www.surreycc.gov.uk](http://www.surreycc.gov.uk)).

Surrey Libraries are to be commended for making their map collection available in this way (they also provide A0 sized copies of individual maps at £10.00 each plus £2.40 postage), and it is to be hoped that other libraries might follow their example. Although the price for the full set is not cheap, it is excellent value for money at around 3.5 pence per sheet. Individual CDs can also be purchased at £24.00 (incl VAT), plus £2.40 p&p. Available from Surrey History Centre, 130 Goldsworth Road, Woking, Surrey GU21 6ND. Cheques payable to Surrey County Council.

*Andrew Robertson*

**Chris Higley, Old Series to Explorer A field guide to the Ordnance map, The Charles Close Society, 2011, ISBN 1-870-59830-9, £12 (£9 to members)**

One unexpected by-product of the digital revolution is the discovery of just how wide is the public enthusiasm for maps, and for OS maps in particular. Just as the age of the paper map seems to be drawing if not to a close, then to a distinct downgrading, all manner of people have emerged and declared their affection (and their collections). Cartophilia seems to have moved from the margins slap into the mainstream, and hooray for that.

Chris Higley's splendid new book will only hasten this very well-mapped advance. It is a one-stop shop for the new enthusiast and old hand alike; a gallop through two hundred years of Ordnance Survey history via the most important medium of all, their prodigious output. To that end, illustrations are copious and colourful, facts and figures plentiful and pointers to where further information can be gleaned (and not *quite* all of it authored by the inestimable Richard Oliver) included at every stage. Having the nod (‘kind permission’) of OS themselves helps immeasurably: a commercial book, which included extracts from so many
in-copyright maps, would cost a small fortune. Not that he’s just been content to show them: there are some brilliantly creative uses (many ‘before-and-afters’ in particular) of many different maps, worth the cover price alone.

Such a bright, breezy tour de force allows the reader to gain a very strong idea of just how rooted OS is within British life. That sounds obvious, for what could be more centre stage in the national self-image than the agency officially created to visualise its territory? Yet all too often, the maps were there only as background, taken for granted by all except a devoted few. Chris Higley shows that the story of OS is the story of Great Britain, in all of its wonderment and weirdness.

He gives us many examples of the national story miniaturised to scale. OS embodies quiet British flair in its ongoing cartographic innovation or its often inspirational artwork, from the delights of Ellis Martin’s pen-and-ink world to the latter-day chutzpah of the Explorer series (‘which may come to be seen as the final, and outstandingly successful, stage in the development of the OS paper map’ as he pertinently has it here). It demonstrates too our military derring-do, whether in the heart-breaking maps of the WW1 trenches in Belgium or the marvellous story about having to rush a replica set of maps to the ships waiting to launch the D-Day landings in the Channel, after someone (he’s not named, fortunately) had forgotten to pack them! It details our worthy belief in scientific advancement for the improvement of man’s lot (and how making money from that is only ever a secondary consideration), from teams of surveyors grimly hauling their equipment to the top of punishing mountains to endless quests for the optimum projections, scales and functionality, and latterly, the free maps to schoolchildren project (now sadly ended). Our maps even, dare I say, bolster our sense of place in the world, and we hold dear to the idea that nobody does it better than us, even when the evidence rather says otherwise.

The perhaps less appealing features of our national character are also there on the map. Our pedantic absolutism to the point of absurdity, such as putting Rockall in its own little box on the side of a 1:250,000 road map. Our imperialism and sometimes haughty officiousness, seen in Ireland or the pretence that Cold War military bases, there for all the world to see, didn’t exist. The flip side of haughtiness is often indecision, and so it is here. Occasional collapses in self-belief have given us the agonising stop-start of numerous new map series during the first half of the twentieth century, reflecting a time in which the country itself struggled to work out its modern role. Bringing the story right up to date, Higley talks of the ‘ever increasing and perhaps confusing range of symbols’ now appearing on some OS maps, which again seems to reflect something of a contemporary national malaise: the desperate urge to have it all, but which often ends up with lots of half-baked compromise, something far less than the sum of its parts.

Because the book is primarily about each and every edition brought out by Ordnance Survey, there are numerous pages illustrated with a map of our island and depicting the many and varied ways in which it has been carved up by the cartographers. We might like to have a bit of a snigger at the shape of countries
such as Italy or Chile, but look again, the island of Britain is a funny one too: thin and streaky here, plump and bulbous there, with bits sticking out of it and others dotted randomly around it. I found comparing the various index grids imposed on the landmass absolutely fascinating – from the no-overlap early one-inch sheets (even if this meant that your map was almost entirely sea) to the hugely familiar 1:50,000 (Landranger) grid, the one that I first fell in love with as a squit of a lad in 1970s Kidderminster.

When I was recording the Radio 4 series On the Map last year, I went to interview Nick Millea at the Bodleian map library in Oxford. The series producer and I had been travelling all over a very snowy Britain together, and had forged a great working friendship. He was, like many people, very fond of maps but shuddered at the idea of being called a map collector, or worse. But he was thawing nicely, and as the days rolled by, confided some of his deepest, nerdiest map thoughts and passions to me. In Oxford, Nick looked something up, and it referred him to Landranger sheet number 131. ‘Boston and Spalding!’ we both chorused immediately, like a couple of Pavlov’s dogs. The producer convulsed in relieved laughter: ‘now I know I’m not a proper map addict! How on earth did you know that?’

How would you not know that, would be my question. A lifelong OS habit has left my mental image of the country’s layout hopelessly skewed by their grid, and being the age I am, that means the 1:50,000 series. I can easily picture what surrounds Manchester, Bristol or Worcester, as they all sit plumb in the middle of their Landranger sheets, but – even after years of Google Earth and the like – I still struggle to place Sheffield, Shaftesbury or Llangollen accurately in their topographic context, places that were condemned to hover in the corner of the map. It’s still a surprise to pick up a bog-standard one-inch sheet at a car boot sale and find that it’s called Montgomery & Llandrindod Wells, Oxford & Newbury, Gloucester & Malvern or Bala & Welshpool – ‘hmm, didn’t realise they were close enough to share the same sheet’, I think as I hand over my fifty pence piece.

Car boot sales, and all manner of other unlikely outlets, feature in the final chapter of Chris Higley’s book, ‘Collecting Ordnance Survey maps’. I loved his description of the dilemma in finding massively underpriced collectibles in charity shops (his advice, which sounds very well-practised, is to say nothing, pay what they ask and slip something extra into the tin on the counter). This was typical of the good humour and eye for detail throughout the book, which, together with its fluid writing style and well-judged cocktail of geekishness and populism, should make it appeal to as wide a constituency as possible. I hope so. This is an excellent calling card not just for map enthusiasm generally, but the Charles Close Society in particular, and will, I am quite sure, help it to go from strength to strength.

Mike Parker

Mike Parker’s The Wild Rover: A Blistering Journey along Britain’s Footpaths (Collins), the follow up to Map Addict, is out now.
Kerry musings
David Archer

I cannot help it, but I like plan chests. Any plan chest, wooden or metal, new or old, even the tacky ones made of laminated chipboard with dodgy drawer bottoms that sag within months. There was a time when I could not refuse to house one. I have nineteen full size chests, four of which will not open as so much weight sits on them, plus two four drawer examples, and one super-large one on wheels that is not assembled at present. Mostly, they are an indulgence, as they are not properly organised or the maps they hold are seldom requested. In our situation, such very long term storage could be better achieved in other ways. On balance, they are wonderful. I need say no more. My case rests. End of musing.

Before I started selling maps, I had a few flat sheets. Like everyone else, I kept them rolled, tucked in a corner and never looked at. I had not progressed to keeping them under the bed between two sheets of hardboard, covered in dust. When I bought my first flat sheets for stock, I knew that the correct thing to do was keep them in plan chests. One just did. So, when I had the chance of any, I bought them, and almost at once realised that they were not really what I needed, as a three foot high plan chest should only hold a sixteen inch wodge of maps. But I was hooked, and kept acquiring them. They are so satisfying. Eventually, even I had to admit that I had run out of space and acquisitions ceased. After Michael Bell died, I bought his six-inch quarter sheets, which he kept in thick-gauge polythene bags. These were a revelation. I bought more, in different sizes, and have been using them ever since. And have disposed of the plan chests? No, bags are even more useful when kept in plan chests.

Before you rush out and get one, you should decide what you want it for. The nicest that I remember was a small four drawer example, made of polished hard wood with brass corners and drawer handles. Sounds a bit corny, but it was a nice piece of furniture (always a good selling point if caught trying to smuggle one into the house), and crammed full of 1:2500 First Edition maps with the pink colouring, which made it desirable beyond belief. If not required as ‘a nice piece’, then is it wanted for long term storage of maps, or for those that you use fairly frequently? If the former, my advice is to forget it, as plan chests really do not hold very many maps. Should not hold many maps, is more accurate.

The great temptation is to keep adding maps to every drawer until defeat is acknowledged. Why? Because otherwise you will have an overfull plan chest and the inevitable map or two with no ‘home’, which you roll and tuck in a corner. ‘What are these doing here? I thought you bought that thing for them.’ Now is not the time to announce that measurements confirm another would fit on the landing.

For fairly frequent use I prefer a chest with ten shallow drawers, over one with eight deeper drawers. Why? Simply because you cannot get as many maps in each drawer. Perverse? Not really. Assuming the drawer is not overloaded (technical term), fewer maps mean that it is easier to pull any one out, with less risk of damage. Easier and quicker to replace after use. Try extracting a sheet with
a small marginal tear that catches on another sheet, the sound and feel of damage infliction is horrifying, regardless of rarity.

Fully loaded (another technical term) drawers do present the possibility of putting curled maps at the bottom so that the weight helps the flattening process. But this takes years to happen, if ever. My two metal chests have a metal rod across the front that holds any curled maps down and is an asset to look for. Drawers with too little in them also cause problems. Our drawers for engraved six-inch full sheets had lots of space on top and around the edges. No longer. Today, the drawers are stuffed with dissected six-inch maps in covers. Well, there was nowhere else to put them. Which are best, wooden or metal? On this, I will come out quite firmly and say ‘Both’. My metal ones run so smoothly, open with the pull of a little finger and look nice. Wooden chests can vary enormously. I have a lot of ex-government examples, well built with framed drawer bottoms, and usually painted a dull colour, as you would expect. Only consider older ones of solid construction, which can take more weight and have protruding metal handles, which are easy to grip.

Having decided on the depth and number of drawers, and that you will be good and not overload them, the next question is what order to keep the maps in? The most used on top, or numerical order? I favour randomness. I find it easiest to consult a list of what should be in each drawer and then rummage. That way, things do not have to be replaced in order and the most frequently used stay on top. Sod’s law states that any map will soon be needed again if put away properly. Less used items drift downwards over time and eventually fall over the back; cartographic composting. Another question: should maps be stored with the top or bottom margin nearest the user’s tummy? I prefer the bottom margin, as it has the most information, including the all important survey dates which are lacking from the top. Pretty soon, no matter what size chest you have, you will get a map that is too large and will have to decide whether to fold it or store it in a tube and have it forever curled when taken out. I do not like folding maps, yet different sized maps in a sequence can be a problem. Anyone who has had to check the completeness of an Ordnance Survey Bi-Centenary set of one-inch Seventh Series knows that the checker’s heart jumps four times as sheets are found to be missing from the sequence, followed by the joy of finding four oversized sheets beneath sheet 190. The ideal I suppose, is one map per drawer. Totally impractical of course.

We have never been able to have all our plan chests in one location. Had this been possible, I would have had to decide on how to arrange the blessed things. Side by side, back to back or one on top of the other? In 1987-88, I visited the Geography Department of Glasgow University and saw two displays that have remained with me. The first was stunning. A bank of modern, shallow drawer metal chests that stretched along a whole wall and reached well above head height. Very impressive. A magnificent sight. The second was a stairwell in the old building with a stack of ancient wooden chests piled one above the other. I would hate to suggest how many there were on top of each other, but my memory is that there were a lot, and one had to lean over the banister to pull a drawer open. Whilst all arrangements have their merits, there is nothing to beat removing a map from a drawer and sliding it on top of the plan chest for viewing. This is both practical and efficient. The golden rule is to keep the surface and space in front clear at all times, just like ours
are, ho-ho. ‘Is there a plan chest under that lot?’ I quite like one and a half, but once you go two or more high, problems start, especially with deep drawers which hold a lot of maps. How do you get up to look in the drawers, and then safely remove the lowest item? Stack plan chests two high and the top will quickly be used for storage, with the risk of too much weight causing the top couple of drawers to stick shut. Putting something on top, ‘Just for now’ always equals permanency.

So, having found a chest and agreed a safe passage to your map room, to get it home you will need a piece of white chalk, which seems to be the industry norm, a screwdriver and an old Renault 5. A standard eight drawer wooden chest consists of two identical boxes, one with a top, sitting on another without a top. Sometimes there is a plinth. Open each drawer and number them one to eight, ignoring the different figures in each drawer from previous moves. Remove the fourth drawer down and take out a couple of screws that hold the two carcasses together. The easiest thing is then to replace the drawer, slide the top box away from the lower one, and move the two boxes as they are. If two of you cannot lift them, remove the drawers, which are very light and the carcasses will be found to be equally light. We used to be able to get one box, with drawers, into a 1990s style Renault 5. Reassembling is simple, but you must position the base correctly. You cannot nudge a full plan chest even an inch to the left or right, especially on a carpet. The whole thing has to be dismantled.

But what about my enthusiasm for polythene bags you ask? Well, we buy our bags from the people who supply the Queen, and jolly handy they are too. On the same floor area that a three foot high plan chest can hold 16 inches of maps, bags can hold 36 inches or more. All bags are labelled and loaded to a comfortable weight, so we work down the pile until we find the bag we need. The contents are kept clean, free from dust and sunlight, and are not damaged by being humped around. Certainly worth considering for long term storage. To remove a map, just pull the bag contents half out, extract the map and slide the rest back. This ability to slide also works wonders with the bags themselves if used in plan chests. Rather than having 160 maps in a drawer, one can have four bags, each with forty maps. To replace a bag, just slide it into the correct place, something that cannot be done with individual maps, unless they are very near the top of a pile.

With a plan chest, one cannot glance at the contents as with the spines of folded maps, and herein lies their allure, a cartographic yashmak. On a library visit, who has not dropped behind and just slid open a drawer, any drawer? All plan chests are full of wonderful things. When the society visited the Bodleian library in September 1991 and were taken ‘out the back’, whilst Betty Fathers was describing the wonders of the collection, she casually pulled open a drawer, seemingly at random, and there was the Laxton map.¹ Let’s face it, plan chests are where the really interesting maps are kept. Surely this is what it is all about?

¹ A plat and description of the whole mannor & Lordship of Laxton ... 1635. An Estate plan showing strip farming landscape, as Nigel James kindly reminded me.
**Letters**

Brian Baily’s interesting article on tidal surveying and accuracy gave an almost complete account but it was surprising that there was no mention of the method of deriving a tide line as a contour deduced from stereoscopic aerial photography taken when the tide is below mean low water.

It is mentioned as utilised at St. Kilda by Seymour and I gave an instance of its use for the 1:1250 resurvey of Brixham. In this case normal tidal photography appeared not available and about three kilometres of quite difficult coastline (virtually inaccessible in one place) was involved. Thus the whole mean low water line and a large part of the high were stereo-machine plotted at HQ Southampton. The accuracy of the low is not of course known but what did come as a surprise was the amount of agreement with the tide line (certainly not supplied by the same method) on the 1:2500 ‘resurvey’ maps of 1950.

*John Cole*

My first response to Richard Harper’s account of digitising the Bodleian collection in *Sheetlines* 90 is ‘when can I get my cheque book out!’

As an amateur historian, one of the ‘holy grails’ is to have easy access to the OS County Series mapping for research and copying purposes and I was in a privileged position to be able to do this whilst working at Ordnance Survey. However, it became clear that when OS confirmed its intention to move to new premises there was little chance of them finding space for the Historic Map Archive. I tried to persuade the director responsible that there would be commercial merit in undertaking a high resolution scan of the archive, but this was not really a realistic proposition. The up-front costs of such an exercise would be difficult to defray from the likely revenue, and it was clear that this activity did not fit the core OS business strategy.

Before I retired, I was working as part of a team to develop the next generation of data architecture for future releases of *MasterMap* and much of the work entailed the creation of hooks which would allow an object to support an enriched classification including its known previous life history. This currently can only extend back to the point when it was first captured as a digital feature (probably no earlier than the 1980s), but what if that history could be traced back to the point when the feature was first surveyed? At that time I considered that it may be possible using software development that some relationship may be constructed between features that existed in the mid-nineteenth century and still exist today (e.g. churches, roads, railways etc.). I never thought about the possibility of geo-rectifying the historic map scans so that they can be matched to National Grid co-ordinate values and edge-matched as well!

A real *tour de force*, but who is funding this major task? Congratulations to the whole team and I look forward to news of when we can see the results.

*Nigel Smith*

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1 *Sheetlines* 90, 4
3 *Sheetlines* 86,38