

Sheetlines

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

Number 105

April 2016



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Published by
The Charles Close Society for the Study of Ordnance Survey Maps
www.charlesclosesociety.org

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Printed by Winfield Print & Design Ltd

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What connects Ambleside, Aylesbury, Campbeltown, Hexham, Penzance, Pwllheli, Southport, Southwold and Stornoway? Just the fact that these are the towns in the mystery maps in December's prize quiz. Congratulations to Paul Jackson, whose entry was the one pulled out of the hat from the forty correct answers submitted. Thank you to all who puzzled these out – and particular thanks to those who described their solving strategy and to those who said how much they had enjoyed the challenge.

The new 'For Sale and Wanted' page on the Society website is attracting many entries and successful sales. See www.charlesclosesociety.org/smallads to view the page and contact info@CharlesCloseSociety.org to post a notice. The same email address is the one to contact to be added to the Society's email list for regular news updates and information.



The 2016 visits programme started with an exploration of the Hounslow Heath baseline established in 1784 by William Roy, from which the triangulation of Great Britain was measured. Here John King, who led the walk, points out the cannon marking the southern end of the line at Roy Grove, Hampton.

Forthcoming visits are listed below. For more information or to book a place contact Bernard Anderson (details inside front cover).

21 April: Imray Nautical Charts, St Ives, Cambridgeshire

11 May: National Maritime Museum, Greenwich

9 June: The Hive, Worcester to see some of the highlights of their collection covering the city and county of Worcester, including estate maps, early county maps and large scale OS plans for the city area.

14 July: Coal Authority, Mansfield to see archives of plans of mines and mine workings as well as associated property documentation.

22 Sept: Dennis Maps, Frome, printers of British and Irish maps, in their new premises.

Any member would like to organise a talk, a meeting, a visit or a 'show-and-tell' in their local area, please contact Bernard Anderson to make arrangements.

The speaker at the AGM in Llangollen on 21 May will be Caroline Walker, talking about her great-uncle the artist and map-maker MacDonald Gill.



Rebranding OS – a view from Cartography Production

Mark Wolstenholme¹

You may have noticed that Ordnance Survey has had a rebrand and by the time you read this we will have finished the task with the release of our rebranded *Landranger* maps. So here's a look behind the scenes to highlight what we've changed on our paper maps.

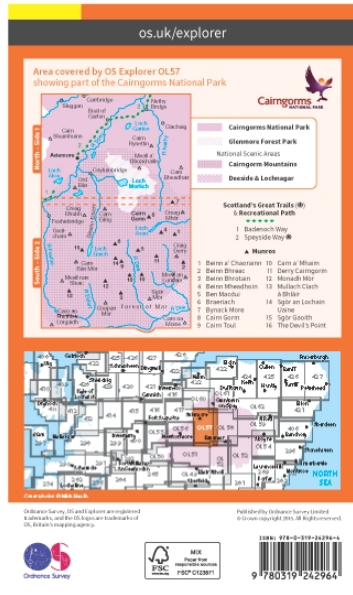
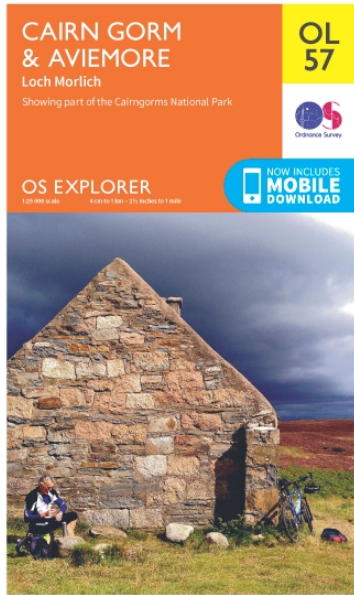
It's summer 2014 and plans to rebrand Ordnance Survey are briefed to staff. The project is pitched as an important refresh required to build a stronger presence in the online and mobile app space. Everyone was given the opportunity to vote on draft ideas that hinted at the thinking behind the new direction; all talk was about a 'dynamic' or 'living' logo. For those of us in Cartography Production the reaction was less to do with an exciting new digital look more about 'could we print it?'. The rebranding was going to be handled by a dedicated OS team working with an external agency that specialised in this type of design. Our challenge would be getting the new look successfully and speedily applied to over 600 maps and covers all while delivering our normal revision programme.

Not just new covers

Central to any rebranding is of course the logo and it tends to be the main change that people notice. Less obvious is the impact of fonts and the colour palette. The choice of fonts proposed presented problems and some debate. Our *Landranger* and *Explorer* maps are raster (pixel) based and it wouldn't be possible to change them. The proposed title fonts didn't have all the characters to support the Welsh language, and the teams building our new digital apps were seeking their own 'clean' look by using classic Gill Sans. The decision to use the old *Explorer* favourite Gill Sans gave me lots of fit problems on covers – the titles were going to be in caps. Hopefully, you'll agree that the result works, despite all the compromises and constraints we had to accommodate. But there was much more to it than just the look and feel of some covers or our website. Cartography Production were bringing in new technologies and working with our marketing team to explore new ideas at the same time.

At one point it was suggested we abandon cover photos altogether to simplify the production effort. Nobody liked that idea and it was marketing that conceived the idea for members of the public to submit their own photos. This led to the extremely popular OS Photofit competition with many thousands of outstanding entries, happily not all sunsets. The competition squeezed another printing deadline for rebranding.

¹ The author is Cartography Consultant at Ordnance Survey.



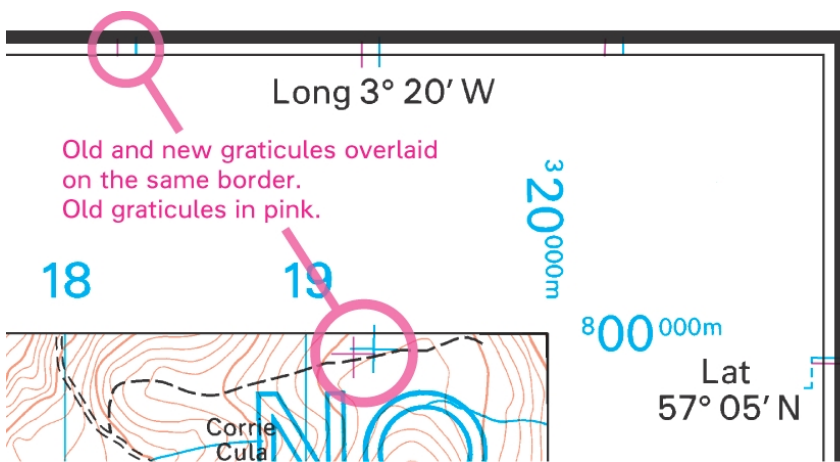
The design for the new covers came through by early 2015, and making them fit for production and robust enough for future revisions took us into early summer. One major change required to keep the clean look involved moving the National Park and other logos from the front cover. This meant they had to be accommodated on the back, giving me even less space to improve the cartography of the map diagrams. In the end I was particularly pleased with the *Landranger* covers which now feature a much clearer coverage diagram, and the return of Sid (Sheet indicator dot) last seen on the green *Pathfinders*. Not only is the black 'sid' square accurately scaled to the miniature GB shape, but the coverage diagram is exactly 80 mm square, or 1:500,000 scale. Rebuilding the coverage diagram for *Landranger* allowed me to finally add rivers as I had done with the last generation of *Explorer* covers. I always felt that these were much more useful than location dots for giving geographical context to an area. Other improvements included making the adjoining sheet diagram on both series the same to help show the relative coverage of sheets between the two. Scripting and GIS tools helped enormously with building and completing each cover, even down to drawing the barcodes directly into the artwork from a database.

Whilst rebranding aimed to expand the reach of our digital maps, we also wanted to give users a mobile version of their paper map. This became a major project across a number of groups at Ordnance Survey; for Cartography Production it meant building a unique process that could take out print production artwork and clip out the map along with insets and extrusions.

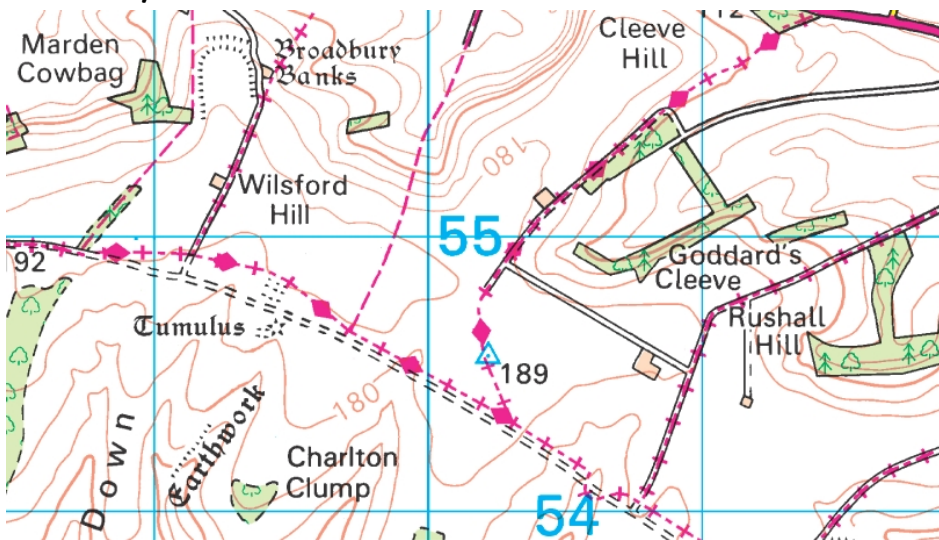
Delivering this data just had to work because we were already printing new covers and sticking unique scratch-off codes inside.

New graticules

Our revision programme itself was going through major changes even without rebranding. One



change was the renumbering of some *Explorer* sheets to bring the South Downs and Cairngorms into the ‘yellow’ *Outdoor Leisure* (OL) set. We weren’t all in agreement with this move as it resulted in a non-continuous set of *Explorer* numbers. Another big change was the position of longitude and latitude marks depicted around the borders of our paper mapping. With the increasing use of mobile GPS devices the difference between our projected OSGB 1936 lat/long and the WGS84 lat/long used by GPS devices was being questioned. With rebranding about to replace all our printed stock over an 18 month period, the chance to address this was taken. I won’t comment on the merit of recasting over 44,000 graticule marks and labels on two raster products to the ETRS89 datum, suffice to say that it was a big task. One recently retired cartographer commented that ‘he was glad to be going now as it didn’t seem right to move the 2° West longitude off of the centreline of the National Grid’. Editions that have had the new graticule marks note the new datum in the legend. On *Explorer* sheets we have also rounded corners of the scalebar box as a ‘tell’. To build the new graticules a special transformation was created by Mark Greaves (OS Geodetics). This was then reworked into a production utility that could draw the marks into a geo-referenced sheet in Adobe Illustrator. This very precise process did reveal a few original errors in the hand-plotted marks from the original sheet borders so maybe it was worth it!



Mixed styles on current Landranger. Note the styles of the word ‘Hill’.

Below; examples of the old fonts (left) alongside the new (right).

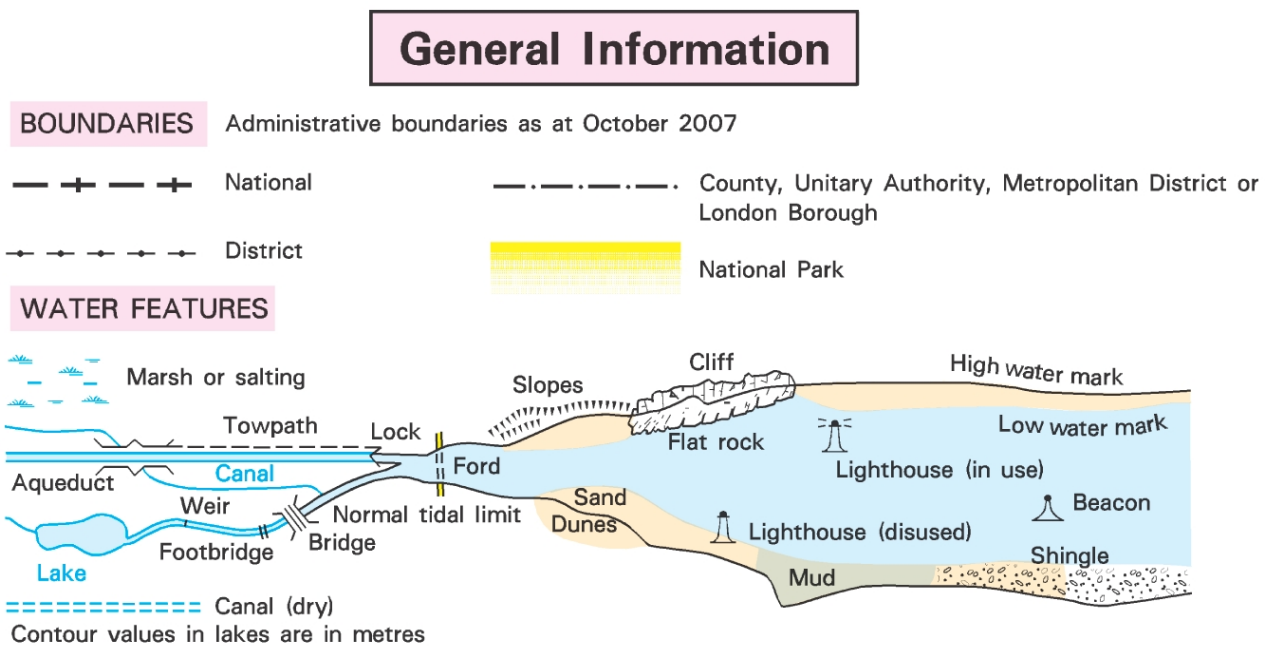
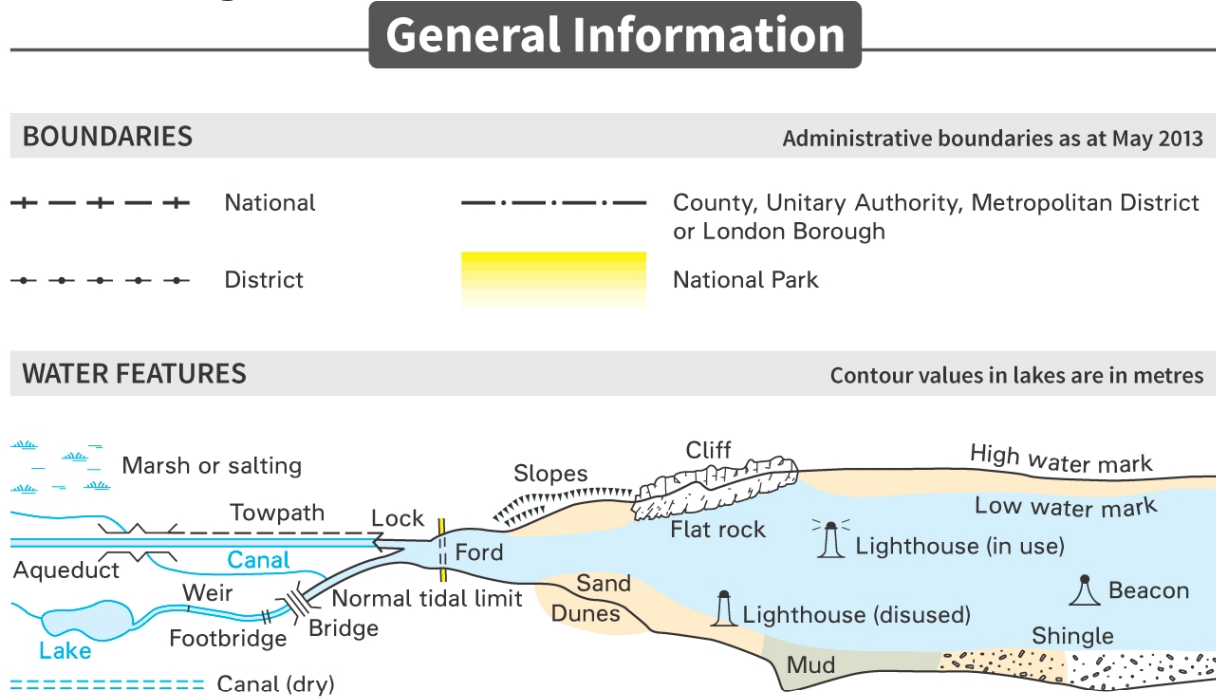
Broadbury Banks	Broadbury Banks
Wilsford Hill	Wilsford Hill
Earthwork	Earthwork

The rebranding exercise coincided with the building of a new GIS-based production system for our raster products so that we could retire the editing system from the 1990s. Time that was going to be spent bedding *Landranger* into the new process now had to be spent prepping every sheet for rebranding. Half of the sheets in the series were going to be rebranded with updates and priority revision and the other half were ‘reprints with new cover’. To support the switch, we had to sort the problem of fonts, which in the legacy system were baked in as shapes, but in the new editor they needed to be standard fonts. It was decided to go to the effort of drawing our own fonts, partly to avoid the expense, but also to take the chance to have our own optimised fonts. Not only Gill Sans and Univers, but a copperplate font for ‘Roman’ names and an old English ‘OS Historic’ font for

antiquities were drawn. For each of the fonts careful consideration was given to improving legibility, making subtle changes to characters to improve readability.

The OS Univers lowercase 'l' for example reintroduces a curved tail to help distinguish it from a capital 'I' in names such as Ilchester. You'll notice a mixture of both on current *Landrangers* as names added in the raster editing system didn't match those created in the conventional days.

New vector legends



New (top) and previous versions of the legends

Being able to automatically draw artwork and text directly into Illustrator using scripts has delivered considerable efficiencies in time and effort, besides being less prone to error. It is early days, but the marriage of GIS-based map editing

and sheet layout in desktop publishing software has brought real benefits to our paper maps.

At first glance the new look *Landranger* maps are much the same as the old ones. Besides the new logo and a title block designed to match the cover, the only other element brought in for rebranding were the ‘charcoal’ intaglio section titles. Rebuilding the legend as vector artwork allowed a number of layout improvements to be made. The width was reduced by 2 mm to ease the left edge away from the panel fold, making the legend more comfortable to read, and the main horizontal fold no longer cuts through the Land Features section. The right edge is now less ragged and the pink title backgrounds are now light grey and extend across the full width to help clarify each subject block.

We decided to remove French and German translations to free up space for new symbols and give a clearer layout. These translations had become somewhat of an anachronism in this mobile app age. Their removal allowed legends on the Welsh maps to exactly match the layout of the English side and provided additional space for more abbreviations to be listed. The National Grid example has been revamped rather than being crammed in with a small text size.

Other changes have been made to keep pace with the outside world; a new Natural Resources Wales symbol to replace Welsh Forestry Commission symbols and on revised sheets the blue roadside assistance telephone is being deprecated and a pink emergency telephone (now just ‘phone’) added. The wind turbine symbol is finally being modernised with a more representative three bladed design, helping to distinguish this from a wind pump. Those *Landrangers* that were not updated during rebranding will have these changes applied on future releases.



One of my dislikes were *Landranger* sheets where the internal grid figures – applied every 10 km across the tile data – would often end up running up close to the neatline. All these extra grid figures were just clutter that obfuscated the map underneath. Now sheets produced through the new editor have just two runs of northings and eastings across the map, always centred in the same place (imagine lines for a ‘noughts and crosses’ game). This halves the number of grid figures, but still gives a set of figures on every pair of panels so that the map can be used folded and read like a book.

That’s almost the whole, hopefully interesting, insight into production at Ordnance Survey. As with everything, it is ongoing with new symbols planned for *Explorer* along with *Explorer* joining *Landranger* in the new editor. For me I must get back to revamping *Explorer* legends for this summer’s new editions.



The Lightning Cities and Road Map Company Limited

Roger Hellyer

1. The County of London map

In his article about GSGS 3786 1:20,000 *County of London* in the 1995 *London Topographical Record*,¹ Christopher Board described the origins and purpose of this 1926 map, and the steps that led to its successors as the Ordnance Survey's "3-inch" map of 1933, the Lightning Plan of 1934, and on to the continued use of the mapping during the Second World War. On the British side this was as the London sheets of GSGS 3906 1:25,000 Great Britain,² and on

the German the 1:20,000 *Militärgeographisches Stadtplan von London*. It is ironic that, had Board written the piece a few months later, he could have included in his discussion GSGS 3786A, the same 1926 map with a secret overprint "showing vulnerable points, magazines, police and fire stations, etc",³ which was available for official use during the General Strike. At the time he was writing all copies were thought to have been destroyed, following instructions to do so in 1933, but only weeks later a copy was released to the safe keeping of the British Library.⁴ Board quickly remedied the matter of the secret overprint with a report on it in *Sheetlines* 43,⁵ where he investigated the nature of the sites involved, and noted the overprint colours as blue, green and brown.

The 1926 map was prepared by M.I.4 and drawn and printed by the Ordnance Survey at Southampton, with gridded proof copies printed as early as 1924.⁶ Its two sheets were in seven colours – black outline, red for railways, tram routes and the County of London boundary, yellow main roads, screened green parkland, blue water with a continuous tone blue infill, and purple grid. The magnetic variation date remained 1924. The specification was notably different from the 1:20,000 topographical map of the country currently in production, GSGS 2748, which was in four colours only – black outline and grid, blue water, brown contours and red grid values. There was no indication of heights on the

¹ Christopher Board, 'The secret map of the County of London, 1926, and its sequels', *London Topographical Record* 27 (1995), 257-280.

² GSGS 3906, sheets 56/18 NW, 56/18 NE, 56/20 SW, 56/20 SE.

³ *Intelligence Division War Office catalogue of maps*, reference 310, 11 March 1926, now in The National Archives (TNA) at WO 408/38. The catalogue was classified 'Confidential'.

⁴ The British Library copy is at Maps CC.5A.170; they now hold a second copy at Maps MOD GSGS 3786a, transferred as part of the Ministry of Defence Superseded Collection. An Ansell fold copy without the secret overprint is at Maps 60.d.52.

⁵ Christopher Board, 'The three-inch map of London, and its predecessors of 1926', *Sheetlines* 43 (1995), 48-50. Board went on to make further observations on the subject in "The really secret map of London is re-discovered", *London Topographical Society Newsletter* 44 (May 1997), 3-4.

⁶ There is a partial copy with a 1924 imprint at TNA OS 1/538, 113A.

London map, either contours or spot heights. Railways were shown by a thick solid red line, rather than the black chequer symbol. Building infill was selective. The same Egyptian font was used for the lettering of both maps. The London map was in effect a street map, with roads drawn wide enough to allow for the inclusion of street names. The accompanying gazetteer consisted of a 133-page *General Index to Streets, Public Buildings, Railway Stations, Hospitals, Theatres, Clubs and Hotels, &c.*, published by M.I.4 in February 1926, each location being supported by a six-figure grid reference,⁷ and an appendix describing that system of reference, which was in fact a very early form of the Modified British System of the War Office Cassini Grid.⁸

The steps that led from the 1926 map to the “3-inch” map of London of 1933 were thoroughly explored by Board and do not require repetition here.⁹ The newly revised map was published in four sheets, each with the print code 6000/33. The scale was of course different, with the metric 1:20,000 replaced by the imperial 1:21,120, and the metric purple military grid by the yard grid then in vogue, with grid lines in red 1,000 yards apart. Its sheet lines were set just within those of its predecessor. There were several changes in specification. The number of colours was reduced from seven to six, with the loss of the purple grid and just one blue water plate and the introduction of the colour grey for railways and tram routes, though railway names and stations were still red. Parkland was altered from screened green to solid green, and main roads from yellow to brown, the new primary routes encased by heavy black lines, their Ministry of Transport (MOT) numbers added in red. The County of London boundary was omitted. There were also security deletions, the most obvious of which was the loss of the entire Royal Arsenal site on Plumstead Marshes. The buff book-fold cover carried a circular image of St Paul’s Cathedral dominating the skyline drawn by Ellis Martin.¹⁰ A list of the options was printed inside the cover of the NW sheet of the forms in which the map could be purchased: each sheet paper flat (1/-) [5p], or mounted and folded in covers (1/6d) [7½p], the four sheets mounted together in Ansell (misspelled Ansel) fold between stout rexine covers together with the gazetteer (10/-) [50p], or a presentation edition of the same in a red French Morocco Gilt Lettered Case in which space was provided for a small-scale map (15/-) [75p]. The 132-page gazetteer retained much from the 1926 printing: the setting of abbreviations and street names generally is identical, though of course with completely different six-figure grid references.

2. The Sanwald patents

What at the time was an entirely unrelated incident occurred on 25 August 1925 when Karl Sanwald, of 27 Parkstrasse, Pasing, near Munich, filed an application in

⁷ *Gazetteer to accompany the 1:20,000 map of the County of London*, London: His Majesty’s Stationery Office, 1926.

⁸ This appendix was illustrated in Roger Hellyer, ‘Some notes on the origin of the Modified British System of the War Office Cassini Grid’, *Sheetlines* 55 (1999), 3-11.

⁹ Board, *op cit.*, 259-264.

¹⁰ The cover was illustrated in *Sheetlines* 104 (2015), 56.

Switzerland for a patent for a method of map referencing.¹¹ The border of the map would be measured off horizontally and vertically, typically into short numbered sections, and an apparatus comprising a transparent horizontal ruler on sprung sliders carrying the same means of reference as those printed around the map could be used to pinpoint any location listed in the accompanying gazetteer or street index, even on a double sided map. Sanwald went on to apply for similar patents in France and Germany.¹² The earliest map traced so far designed to be compatible with this device was the ca 1:27,000 *Sanwald-Plan Berlin*, published in 1926.¹³ Following this Sanwald plans are recorded for Bochum,¹⁴ Düsseldorf, Garmisch-Partenkirchen, Hamburg, Herne, Kissingen, Landshut mit Achdorf und Berg ob Landshut, München, Stuttgart and Würzburg, as well as the *Auto-Strassen-Karte Sanwald* at scale 1:300,000 in twenty sheets, 1934.¹⁵ Publication dates were haphazardly applied to these maps, but apparently new titles continued to appear until about 1936. Street or place name indexes formed an integral part of each publication.

Sanwald continued to develop his ideas and in 1932, in the name Else Sanwald,¹⁶ he applied for a patent in the United States of America for a far less cumbersome method which involved a combination of map folding and referencing.¹⁷ The fold was hardly new, being described as zig-zag – we might prefer concertina (for instance Michelin maps had long been folded in this way, as later was the Ordnance Survey Fourth Edition quarter-inch map), but the related method of map referencing was the feature essential to the patent. This constituted the same numbered sections to about half an inch in width around the completely assembled map. It had always been straightforward to add eastings in the top and bottom borders of a map, but southings similarly located instantly disappeared once the map was turned over to the next section. Sanwald patented a way to overcome this, by printing the southing values on the end card covers of the map, the width of which would be slightly greater than the map sections so allowing those values always to be visible wherever the map was folded. The claim was that any place named in the index could be found on the map in seconds by means of the combination of its southing and easting values.

¹¹ Patent No. 115,728 for a *Suchereinrichtung an Landkarten, Stadtplänen und dergleichen*: the application filed 25 August 1925, patented 1 July 1926.

¹² French patent No. 603,449 application filed 21 September 1925, patented 15 April 1926; German patent No. 464,297 application filed 9 January 1928, patented 14 August 1928.

¹³ There is a copy in the Staatsbibliothek zu Berlin Preussischer Kulturbesitz, at Kart. 19016. It may also be viewed online at test.berliner-stadtplanarchiv.de by clicking the time bar at 1926.

¹⁴ There is a copy in the Bodleian Library, Oxford, at C22:45 Bochum (3) – so far the only copy of a Sanwald map the writer has traced in the United Kingdom. The street index to this map is on the reverse side.

¹⁵ There is a copy in the Deutsche Nationalbibliothek, Leipzig / Frankfurt am Main.

¹⁶ The writer has been unable to confirm that Karl and Else were husband and wife.

¹⁷ Patent No. 1,921,332 for a *Zig-zag folding map*: the application filed 15 July 1932, patented 8 August 1933.

Sanwald followed this with successful applications for similar patents in Great Britain, Austria and Canada.¹⁸ This writer has no information as to whether the patent rights were ever taken up elsewhere, but in Great Britain they were purchased by Mr Koenig and Mrs Rawson, as co-directors of The Lightning Cities and Road Map Company Limited, with offices in Halton House, 20-23 Holborn, London EC1, their aim being to market maps using the zig-zag fold and the associated reference system as “Lightning” maps and plans.

3. Lightning Cities and the Ordnance Survey

The patent is central to the next chapter in the history of the Ordnance Survey’s “3-inch” map of London, which had been published in July 1933, the Survey’s intention being to follow it with revised editions. But while by late 1934 the folded versions of the map had sold well enough, the flat sheets had not, and they could not justify publishing a revised edition until they had reduced the stock of an already obsolescent first printing. Even before it was published, the map had received more than its fair share of criticism both within the Survey and outside,¹⁹ but that hardly seems sufficient reason for the Ordnance Survey then to approve a revised version of the map put out by another publisher, and in the process largely destroy the market for their own. But such was the case. We first learn of this from correspondence with Waterlow & Sons Ltd, the commercial printers notable for their supply of bank notes and postage stamps, in the final week of October 1934.²⁰ This prompted a memorandum from Martin Hotine (O.Maps) to the Executive Officer on 3 November,²¹ which reported that Waterlow’s were to put on sale a revised version of the OS map “in facsimile”, folded, cased and with a gazetteer at a price (3/- [15p], corrected in another hand to 3/6d [17½p])²² which undercut even that of their own paper flat version. He recommended withdrawing the OS map since, although the Survey were not the publisher of the more up-to-date Waterlow map, “we have connived at its publication and if he knows his business he will certainly advertise the fact that it is an O.S. map. If we continue selling our own map in the hope of catching a few fools who are prepared to pay double for a superseded map, we are certain to arouse a storm of criticism from anyone who finds out about it afterwards”.²³ Hotine went on to write that “if Waterlow’s map flops – as it may owing to its

¹⁸ The application in Great Britain was under Else’s name: patent No. 394,936 for *Improvements in folding maps*: the application filed 11 March 1933, complete accepted 6 July 1933. It was under Karl’s name in Austria (No. 136,351, patented 25 January 1934), and Else’s in Canada (No. 359,863, patented 18 August 1936). Perhaps Else had better command of the English language.

¹⁹ Board, *op cit.*, 264.

²⁰ Reference to five letters between RC Slacke at Waterlow’s and the Ordnance Survey are listed in TNA OS 1/338, minutes 61 to 65: the texts are no longer on file.

²¹ TNA OS 1/338, minute 80.

²² No doubt this was a notional price, which on publication had risen to 4/6d [22½p].

²³ There was in the event no attempt to make capital out of the fact that this was an Ordnance Survey map. The tiny marginal record of the print run, 25,000/34, was standard practice for the Ordnance Survey with any repayment service product.

unwieldy format – we can of course consider re-publication in a revised form, but there is no room on the market for both at present”. But in spite of Hotine’s protestations, Director General Winterbotham was not inclined to withdraw the map,²⁴ and sanctioned its appearance in the next edition of the small scales Description booklet.²⁵ It was still present in the 1937 edition.²⁶ Clearly sales of the map did continue, as is evident from the need to print additional covers with an “ER” royal cypher.

The puzzling thing about these documents is that, while it was Waterlow with whom the Ordnance Survey were in correspondence about the new edition, it was not to be a Waterlow publication, but that of The Lightning Cities and Road Map Company Limited, who entitled it *Lightning Plan : London City and Suburban Plan with streets index*.²⁷ The patent number 394,936 is present on the cover almost as part of the title. That it is the same map is surely unarguable when Hotine writes of the “unwieldy format” of the new publication, which, as we will see, is an apposite description of the Lightning product. But the Lightning Cities name does not appear in Ordnance Survey files, and, other than as printer of the gazetteer, Waterlow’s does not appear anywhere on the map, and as yet the author has been unable to learn what if any their relationship was with Lightning Cities. It seems that for whatever reason they were acting as an agent.



Figure 1.
Part of central London, as depicted in the *Lightning Plan*. Note the southing values and the screened red circles added around the terminal railway stations

²⁴ TNA OS 1/338, minute 82.

²⁵ *A description of the Ordnance Survey small scale maps, 8th edition* [1935], 18-19.

²⁶ *A description of the Ordnance Survey small scale maps, 9th edition* [1937], 19.

²⁷ Advertised later as *The Lightning Plan of London & suburbs with streets index* / scale, 3 inches to 1 mile / Obtainable from The Lightning Cities & Road Map Co Ltd. Halton House, 20-23 Holborn, EC1.

The Lightning Plan of London was a revised edition of the 1933 map. 25,000 copies were printed by the Ordnance Survey in 1934 – a huge number, more than four times greater than the Survey's own printing the year before, and most of that was still unsold. Such was Hotine's obvious acquaintance with the product that a provisional if not a final version must have been ready in October. As to specification, the colour of the railways and tram routes, red in 1926, grey in 1933, was altered to black. There was no grid, and, with MOT road numbers deleted, all that remained on the red plate were railway names and stations, with screened red circles added around the terminal stations Waterloo, Charing Cross, Victoria, Paddington, Marylebone, Euston, St Pancras, Kings Cross, Liverpool Street and Fenchurch Street (see figure 1). There were any number of topographical changes – for instance in the north-west corner one finds the Stanmore Branch of the Metropolitan Railway open rather than under construction, and crossed by a projected extension to Kingsbury Lane, infill of several of the buildings in the Wembley Stadium complex, the alignment of the London Electric Railway altered between Brent and Hendon Central, and the North Circular Road completed between Harrow Road and Hanger Lane.

For the purposes of this map the Ordnance Survey printed the four sheets of the original "3-inch" map of London in three extended sections – the NW and NE sheet east to the Isle of Dogs, the NE sheet from the Isle of Dogs and the SW sheet to Battersea Park, and the SW sheet from Battersea Park and the SE sheet. The three were glued together to form a map which was over nine feet long, made even longer by end covers made of soft cardboard. The whole, including the covers, was folded once along the long axis, then again in concertina or zig-zag fashion into twenty sections, or eleven openings. All detail outside the neatline of the four original sheets was deleted, and replaced around the edge of the map assembled into its new format by the serially numbered reference sections of the Lightning Plan patent. These start at 1 in the north-west corner, the eastings reaching 210, the southings 43. It was clearly not of importance to the publishers for the easting sections to be the same width as the southings – the former are just over half an inch wide (perhaps to give enough space for three digit numbers) and the latter just over a centimetre. The southing values are reprinted along the outer edge of the slightly wider covers to ensure they are always visible. In the index southing values precede easting. They are also printed in a bolder font than the eastings, a nicety that dated back to Sanwald's map of Berlin, and which was replicated in the gazetteer, the work of Waterlow & Sons Ltd, London Wall. This was affixed inside the front cover of the map, and its weight unquestionably made the format unwieldy, as Hotine had noted. Though completely reset, it was a further derivative of that of the 1926 map, which is evident from the fact that all the same abbreviations are present and all are identical. In its 59 pages there are some 21,000 entries, all more complex than the earlier versions in that area names are given for all entries, not just suburban ones, and postal district codes are added. The map cover was an expensive production in four colours, black, blue, green and red, the centre piece being a composite illustration of well-known landmarks, St Paul's Cathedral, Tower

Bridge, Nelson's Column and the Palace of Westminster, the whole criss-crossed by zig-zag lines suggesting lightning – and at the same time perhaps an allusion to the fold of the map.²⁸ The designer was not named. On the reverse was a well considered “Diagram of map before folding to show method of joining sections”.

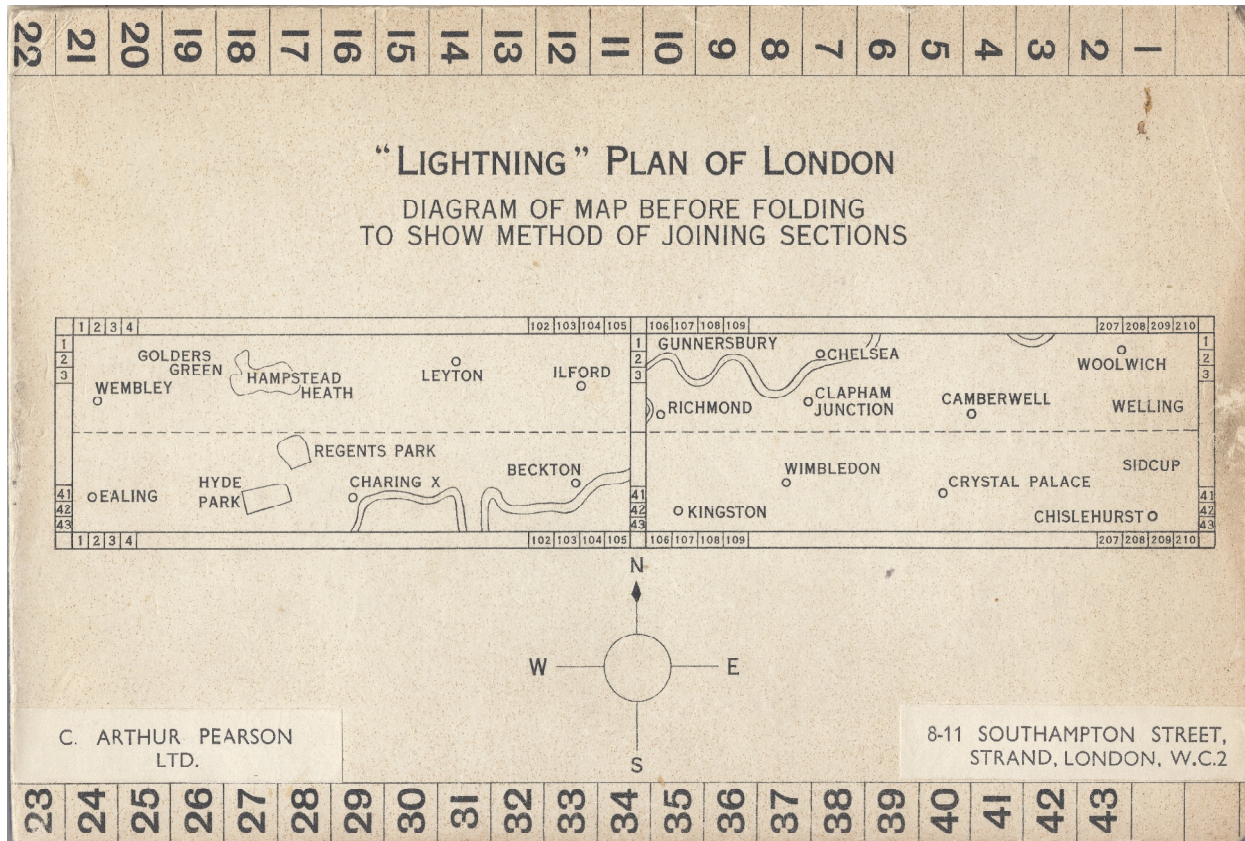


Figure 2. The back cover of the *Lightning Plan of London*, showing the edge strips containing southing values, the diagram, a compass, and, on this copy, the trade labels of C Arthur Pearson Ltd (see section 6)

4. *Lightning Cities and John Bartholomew*

In order to place the later history of the *Lightning Plan of London* into context it is necessary to make a diversion into the affairs of John Bartholomew & Son Limited, Edinburgh. *Lightning Cities*, to use the abbreviated name for the company adopted by Bartholomew, certainly had grandiose aspirations. The *London Plan* itself was offered in four formats: on paper, priced 4/6d [22½p], on linen (12/6d) [62½p], on linen, dissected (15/-) [75p], and a de luxe edition, on linen, dissected, with leather bound cover blocked in gold (21/-) [£1.05]. And *Lightning Cities* had a second, yet more ambitious, project in mind in a road map of England and Wales – a map that within two years would lead to the company's ruin. The first idea appears to be what was advertised within the gazetteer of the *London Plan*: a three miles to one inch motoring map of England and Wales, to be published in June 1935 in fourteen sections priced at 3/6d [17½p] each. The publisher's puff offered seven reasons why the motoring public could not afford

²⁸ The cover was illustrated in *Sheetlines* 104 (2015), 56 and at the head of this article.

THE "LIGHTNING" MOTORING MAP
OF
ENGLAND AND WALES
(3 MILES TO 1 INCH)
PUBLISHED IN 14 SECTIONS

THIS new patented map will revolutionise the presentation of road and city maps throughout the country. It is indispensable to all who use the roads either for business or pleasure.

Consider the following advantages it offers :—

1. Any place can be found within a few seconds by means of the patented Double Grip Reference System. It is so simple that a child can operate it.
2. The map does not need to be opened at more than one page, but can be spread out flat if required.
3. The map is arranged so that one can travel the whole section simply by turning it over page for page.
4. A new and up-to-date Alphabetical Index is provided giving the name and location of every place shewn in the map, together with a diagram of every important city and town that is included in the section.
5. On the back of the map is printed a complete plan of all the main roads throughout the country.
6. The map will last for years owing to the fact that it does not need to be opened out and thus only gets the minimum of wear.
7. Valuable assistance is given to motorists by the listing of Hotels, Garages, etc., in the area covered by the Map.

PRICE PER SECTION . 3/6
TO BE PUBLISHED IN JUNE, 1935

Obtainable from :—
THE LIGHTNING CITIES AND ROAD MAP CO. LTD.,
HALTON HOUSE, 20/23, HOLBORN, LONDON, E.C.1
and all authorised selling agents

Figure 3. Lightning advertisement for the planned 1935 road map of England and Wales

including the furnishing of printed copies. In any case, it is against our rules to supply plates of any of our copyright maps for printing by outside firms. In the circumstances we regret that it would not be possible for us to undertake the work of preparing printing plates for you for this particular piece of work.

Lightning Cities had indeed asked Bartholomew on 20 November to prepare a set of road maps for them [62/747], and were met with a positive response "..... we shall be only too pleased to let you have quotations for furnishing you with specially printed editions of any of our maps, and we shall be glad if you will kindly let us have full particulars of your requirements" [62/768]. Their interest lay in the Bartholomew quarter-inch *Automobile Map of Great Britain*, a map with

to be without a copy (see figure 3). But what base map at this scale they had in mind is not revealed, and no such map was ever published.

Lightning Cities had met Bartholomew representatives in the Edinburgh firm's London office as early as March 1934 in order to demonstrate their patent system for indexing maps [62/768].²⁹ But it seems that their next move was to ask Waterlow's to provide them with a road map. Waterlow, not being a publisher of maps themselves, first sought to use Ordnance Survey plates, but Winterbotham ruled on 7 November that "With regard to the proposal for the printing by Waterlow of certain quarter-inch maps, I have already written to the firm telling them that I am sorry I cannot go further with that proposal".³⁰ Waterlow thus turned to Bartholomew, only to be refused on 12 December for a second time [62/859]:

Set of quarter-inch Maps.

We acknowledge receipt of your letter of 10th inst. In reply, we would inform you that we have already quoted direct for this work,

²⁹ The full references to all the Bartholomew documents quoted are listed at the end. For brevity, and in order to reduce the number of footnotes, letterbook references are recorded within the text in the form letterbook volume number/page number, e.g. [62/900].

³⁰ TNA OS 1/338, minute 82.

contour colouring first published in 1929 and revised in 1933. It appears that Bartholomew were currently undertaking further revisions to the map, foremost among which was the introduction of the Ministry of Transport's own road classification. At the same time the yellow plate used for second class roads was abandoned, and replaced by red pecks. The green for layers to 500 feet used on the 1929 but not the 1933 map was reintroduced. But Lightning Cities were not interested in this five-colour map as it stood, in 23 sheets, sixteen of them covering England and Wales, because they required their map sections to be as long as possible in order to maximise the benefit of their zig-zag map fold and referencing system. Thus reassembling the England and Wales sheets in a layout of nine or ten sections was considered, which after further discussion, by dint of squeezing in several land extremities as insets, was reduced to eight measuring some 40 inches by 18½ [63/365]. The sheets were numbered from the south east, with the Bartholomew border replaced by Lightning Cities' patent system of numbered reference sections, each now precisely one centimetre wide. Each sheet was to be "folded and inserted in special covers in three printings and with two-colour advertisements" [62/790]. Formal orders were placed for 10,000 copies of sections 1 to 3 on 29 March 1935 [63/478], and of the others on 17 May [63/688].³¹ On 14 May Lightning Cities informed Bartholomew that "we intend to issue on January 1st next year" [63/927].

However, over the coming months Lightning Cities' list of additional demands continued to grow, each adding to the cost. They requested the compilation of indexes listing every city, town, village and hamlet (but no estates or gentlemen's seats) named on each sheet [63/815]. They asked for plans of significant towns, 72 in all, to be added into these place-name indexes [63/608], which once printed mostly ran to over forty pages. Bartholomew were asked to add road mileages, which they were reluctant to do: "The required road mileages and MOT road numbers can only be done at an extra cost – we think to include both would be confusing" [63/430]. Nonetheless mileages were added in blue to join the already present road numbers, with blue circles at the end points of each section. Lightning Cities requested an outline map at twenty miles to the inch of England and Wales with a comprehensive list of place names to be printed on the reverse of each sheet. With nothing of the kind available, Bartholomew had to prepare one specially [63/375]. It was entitled "*The Lightning*" *Road Map of England and Wales*, and incorporated towns, three categories of road and county boundaries. The border carried the same style reference system as the maps, and the bottom half of each sheet was given over to an index of every place-name. They enquired about the special OS pure rag paper, only to be told that this could not be used within the price quoted [63/106]. The question of backing on Jaconet was raised [63/688], and it was later agreed to print 8,000 copies of each

³¹ The job number 1110 was allocated to sheets 1 to 3, and 1136 to sheets 4 to 8. These numbers appear on various documents throughout the Bartholomew Archive, ultimately to the Trade Record (Acc.10222/593), Trade 6, 1933-36, where the two numbers come together to produce a combined invoice for the eight sheets. They also appear as print codes on the maps themselves.

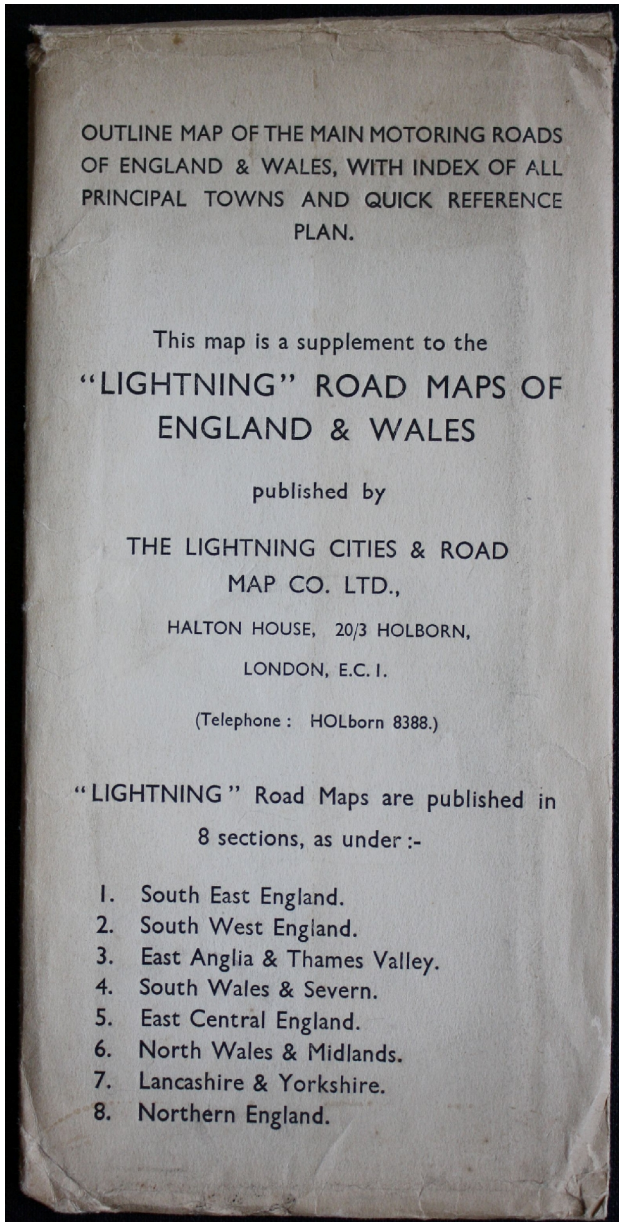


Figure 4. The envelope designed for independent copies of the map of England and Wales [National Trust collection at Shaw's Corner, NT 3203319]

sheet on paper and 2,000 cloth backed [63/767]. Three times Bartholomew asked what to do about the printing planned for the reverse side of the cloth-backed stock [63/688, 722, 767]. This was resolved by a further change to the order, to 8,000 double sided, 2,000 single sided front and 2,000 single sided reverse [63/787] – numbers themselves later altered to 6,000 and 4,000 respectively [63/812]. Some if not all of these single sided printings of the outline map of England and Wales were packaged separately in specially prepared envelopes (see figure 4).³²

Though Bartholomew agreed contracts with Lightning Cities, and to undertake most of their additional requests, a note of caution was present from the start. On 28 November 1934 they advised the London Office “Some arrangement regarding payment would of course require to be made as we have no information regarding this Company”, and “As an alternative would they not be inclined to consider imprinting their numbers on the copies of our existing sheets, which would really be much less expensive” [62/790]. By 31 January 1935, the concern was greater: again to the London Office [63/107]:

I greatly fear it is a somewhat risky business having dealings with these people unless we are assured of payment. You mention that Waterlow are allowing them three and six months credit, but I wonder if you know what the O.S.

arrangement was with them about the plan of London. For your private information I am enclosing Stubbs's Report.....From this you can gather that there is not much spare cash, and that they would probably only be able to pay if they sold the maps and were able to obtain payment from the garages through whom I understand they hope to sell the maps.

By November it was the intended pricing of the maps that was causing problems: on 1 November, again to the London Office [64/367]:

³² A copy is held by the National Trust in their property Shaw's Corner, at NT 3203319.

You will doubtless have fully realised that in the event of their issuing the ¼" series at a lower published price than our own, we would be in for no end of trouble both with the trade and the A.A., and it would practically put a stop to the sale of our own series..... Lightning Citiesindicated they would be publishing at a considerably higher price than our own series.

His apprehension notwithstanding, Bartholomew completed the double-sided printing of sheets 1 to 3 by 29 July, and sheets 4 to 8 by 16 December 1935.³³ Sheet 2, which was taller than the others, was printed singly, as was sheet 8, the others in pairs.³⁴ The 16,000 single-sided England and Wales diagrams required to accompany the cloth backed copies were printed in pairs on 29 October.³⁵ Folding and trimming the maps seems to have been a job initially shared between Bartholomew and Waterlow, but in September Bartholomew wrote that "There are several difficulties connected with the mounting and folding, and we feel that to do proper justice to your patent method, it is indispensable for the processes of mounting, folding and casing to be co-ordinated under one control. We suggest, therefore that it would be better for you to entrust Messrs Waterlow with the remainder of this part of the work" [64/226]. With the finishing work now conducted elsewhere, Bartholomew wrote to Lightning Cities on 10 December to request completed copies for reference purposes [64/574]. The first three sheets were received three days later [64/601].³⁶ First quotations for the final part of the contract were submitted on 19 December [64/625], for a four-page prospectus displaying an index of the map, a description of the reference system against an exemplar map of the Isle of Wight (see figure 5), an advertisement for the Lightning Plan of London, and a list of the advantages to the motoring public of purchasing a Lightning product. The print run of 50,000 copies requested was completed, in blue, by 24 January 1936.³⁷

Bartholomew's problems with this contract now began in earnest, when Lightning Cities failed to pay the first instalment of their account rendered at the end of 1935 [64/744]. From evidence later in the correspondence, it is clear that the map did actually go on sale and that the total stock of some 80,000 sheets had been reduced by 6,000, presumably as 750 sets of maps, before Lightning Cities were compelled to cease trading. This is perhaps not the place to relate the events of 1936 in detail, just to piece together enough of the sequence from their failure to pay the first bill in order to explain how it was that Bartholomew ended up publishing the unsold stock of the road map, owning the rights in it to the patent,

³³ Job Register 1925-1939, Bartholomew Archive, Acc.10222/283.

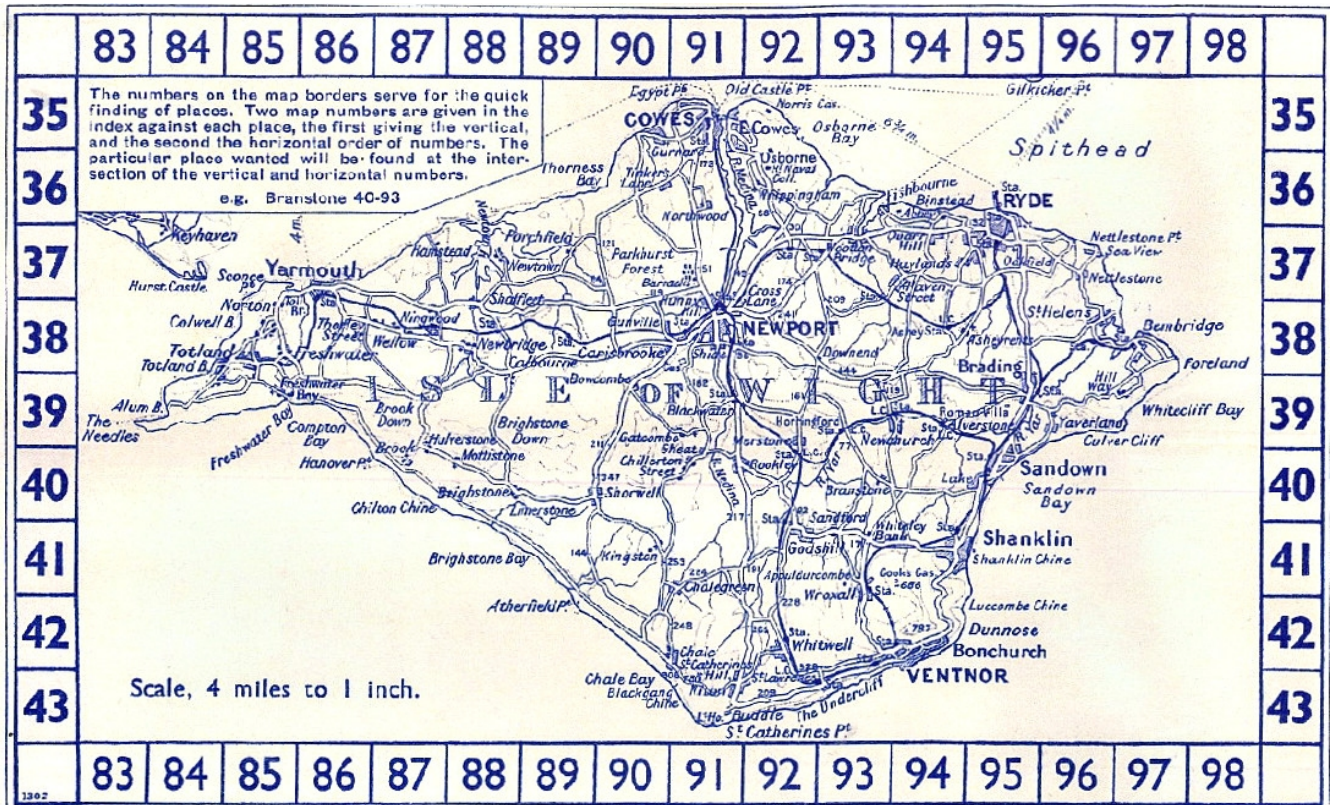
³⁴ Copies in this form are in the Bartholomew Printing Record, at Acc.10222/PR/83a: folio 12 (sheets 1 and 3), folio 15 (sheet 2), folio 10 (sheets 4 and 5), folio 14 (sheets 6 and 7), folio 13 (sheet 8). Each record a print run of some 6,000 copies: presumably the cloth backed copies formed a separate job.

³⁵ A copy is in the Bartholomew Printing Record, at Acc.10222/PR/83a, folio 11.

³⁶ These copies appear not to have survived in the Bartholomew Archive.

³⁷ A copy is in the Bartholomew Printing Record, at Acc.10222/PR/83a, folio 42. 51,164 sheets were printed, eight at a time on 6,396 sheets.

settling Lightning Cities' debt to Waterlow – and, in addition, acquiring the remnant stock of the Lightning London Plan. From the correspondence we learn a few names: that the Managing Director of Lightning Cities was a Mr Koenig, who with his co-director Mrs Rawson jointly owned the Lightning patent, that their sole agent from February 1936 was Messrs EJ Larby Limited, of 30 Paternoster Row, London EC4, the map publisher and retailer now managed by EW Larby, that Bartholomew's contact within Waterlow's was VE Goodman, the general works manager.



The actual map is in five printings with contour colouring and shows Ministry of Transport Road Numbers and Mileages between Towns

Figure 5. Sample map of the Isle of Wight, showing the Lightning system of referencing [National Library of Scotland, Bartholomew Archive, Acc.10222/PR/83a folio 42]

In hindsight it is clear that Lightning Cities never were in a position to meet their obligations, which were debts of some £3,000 to Bartholomew and more than £600 to Waterlow (see figure 6).³⁸ They found a succession of excuses by which to withhold or delay or reduce payment, one ploy being initially to agree to an arrangement, then to find problems with it which would cause further delay. First they challenged Bartholomew's costings and actually achieved a five per cent deduction off the total amount [64/775], and also asked for their bills to be rescheduled, which Bartholomew were prepared to consider [64/776]. They then invited Bartholomew to quote for covers for one hundred copies of the London

³⁸ The debt to Waterlow's was in the event much higher, as the figures in the statement of their account (figure 6) will reveal. That statement also confirms that the only payment ever made by Lightning Cities to Bartholomew was a cash advance of £300 in March 1935.

Plan [64/787], and prevaricated further by enquiring about printing additional copies of the road maps [64/890], and even went so far as to ask if Bartholomew could supply similar road maps of Canada and the United States [64/981]. Next they offered to liquidate their liability at the rate of 1½d for every copy sold,³⁹ which was refused outright by Bartholomew, though they were prepared to accept monthly payments of 10d per copy “with the addition of 5% on any outstanding balance” [65/272].

With no response to this offer forthcoming, Bartholomew decided on 12 May to seek an ally in Waterlow’s as another creditor [65/312]:

We are holders of Bills of considerable amount against this company, and understand that your firm along with ourselves are probably the principle [*sic*] creditors. We have been informed in respect of the first Bill, which is now due, that funds are not available to meet it. While we are unwilling to compulsory wind up the company if it can be carried on on a profitable basis, we would point out that the offer so far made to meet our claim is quite inadequate.

The purpose of this letter is to ask whether you would be good enough to give an opinion with regard to the position of this company, and also whether the writer might call and discuss with you during his next visit in London a possible solution of the difficulty.

And on 4 June Bartholomew suggested to Waterlow “that unless we can get some immediate and reasonable assurance regarding payment from the above Company, we should close them up and offer to take over the stock ourselves, as we feel we might do better with the disposal of it than they are able to do at present” [65/448].

It appears to have been VE Goodman at Waterlow’s who entered into negotiations on Bartholomew’s behalf and persuaded Lightning Cities to appoint Bartholomew publisher of the quarter-inch map. On 16 June Bartholomew confirmed proposals “that we would purchase these at 40% of the published price, that we should make a settlement with Larby under which he will agree to surrender his sole agency, that out of the proceeds we should liquidate our own and Messrs. Waterlow’s accounts, responsibility for the latter of which we would assume, that Messrs. Waterlow would hold the stock of this map on our account” [65/517]. Bartholomew might also wish to change the cover and title of the map to hide its association with Lightning Cities. They urged haste, partly because the second bill became due on 4 July, but also because “a publication contract, unless fixed up at once, would not be able to make anything of the current season”. Bartholomew was all too aware of the early onset of obsolescence in a road map. They sent a copy of this correspondence to Goodman at Waterlow’s [65/519], asking him to send it on to Lightning Cities if he agreed the contents.

On the same day Bartholomew wrote to Lightning Cities’ agent EW Larby, from which we learn more of Bartholomew’s ideas should they acquire the publication rights of the road map “which we believe we can place on the market

³⁹ Which would have grossed £500 had every one of the 80,000 sheets been sold!

as the R.A.C. ¼" Map of England, the contract for which we have just been awarded by the Club. Such an arrangement, I need hardly say, would greatly enhance the selling value of the map" [65/520]. But in order to achieve this it was essential that Larby surrender his company's sole agency with Lightning Cities, currently valued at £100, and if he agreed to Bartholomew's becoming the publisher instead, they would, in place of a £100 settlement, increase his discount from 50% to 55%, "which certainly would not be shared by any other wholesaler".

But still something was not to Koenig's liking. We do not have his letter of 18 June to Bartholomew, but we do have the reply of 23 June [65/555]. Koenig had obviously tried to get the London Plan included in the transaction, but Bartholomew replied "we may say that since your London map is not of our production we are not keen on undertaking its publication". And Koenig was clearly not happy with the 40% valuation, which would have been paid on sales of the map achieved every month once the Bartholomew and Waterlow accounts had been settled. Bartholomew therefore offered an alternative of purchasing the remnant stock of some 74,000 sheets outright at 10d a copy, with a royalty to Koenig of 2d per copy sold for use of the "Lightning" patent incorporated in the index, and settling Lightning Cities' debt with Waterlow. Koenig negotiated an increase in these amounts to 11d per copy, whether on cloth or paper, and 3d royalty [65/580].⁴⁰ The matter seemed settled and Bartholomew instructed their solicitors to draw up an agreement on these terms [65/582], and advised Waterlow of the arrangement [65/592].

Koenig now tried to muddy the waters still further, as may be inferred from Bartholomew's memorandum to their London Office on 2 July, when they stipulated that "It should be obvious that in so far as our offer covers payment for all the work already done on this map it should include delivery of everything pertaining to the stock (added in manuscript: Maps, Covers, Index & Backing Map)", and further "under no circumstances will we accept additional liability, e.g., for money spent on the London Map or other objects" [65/614]. Bartholomew went on:

In any further negotiations with this Company you should keep in mind that the following is our attitude to them – In our dealings up to the present we have followed the procedure which is customary in dealing with any honourably conducted firm. If this Company is sincere in its pretence that it cannot earn sufficient money to pay for the goods it has ordered, it should be very pleased to have the opportunity of selling these to defray expenses and still retaining a substantial royalty in respect of their patent, along with the possibility that this might be increased with the extension of the series say to Scotland and Ireland under the R.A.C. Our next Bill for £1100 will be duly presented on 4th July and if it be dishonoured and this Agreement not effected, we see no alternative but to proceed with the winding up of the Company, in which case any attempt to use the debenture holder as a

⁴⁰ These tiny amounts do not convert readily to decimal currency, twelve old pence being the equivalent of five pence now.

fraudulent means of evading their just debts will be proceeded against with every energy.

Meanwhile Larby had written to Bartholomew accepting the terms of their new agreement. But Bartholomew felt it necessary to warn him of the current situation [65/630]:

..... although we made them a very generous offer, which at first they seemed disposed to accept, the Agreement has so far not been ratified, and we find it a little difficult to avoid the impression that their manoeuvring savours of sharp practice. I should like to mention that you would be conferring a considerable obligation on our firm if you would refuse to cancel or modify in any way your Agreement of February last with them, unless of course they consent to honour their debts in some such way as we have suggested to them.

Matters reached crisis point on 6 July, when Bartholomew wrote to Lightning Cities “We beg to give you formal notice that your Bill for £1100, due 4th July, has to-day been returned dishonoured” [65/632].

Two months went by. At the start of September it seems that Koenig quarrelled with his co-director Rawson, who, anxious to protect her half of the patent, threatened to put in the Official Receiver on her own account [65/878]. To forestall her, Koenig made another approach via Goodman at Waterlow’s, this time to sell the map stock outright for £3,000, and a further £1,500 personally in lieu of his patent royalty, an offer which Bartholomew noted “strikes us as most improper”. Their view was that now that the season was over, the value of the map stock had much depreciated. Bartholomew therefore pressed Goodman to join him in taking steps to wind up the company [65/867]. Confronted with this threat it seems that Koenig was finally persuaded by Goodman to agree a price of £3,000 for the entire map stock, this now including the London Plan, and a royalty payment set at £1,000, to be shared by Koenig and his co-director, which would give Bartholomew the right to sell the stock but not reprint it, so far as the patent was concerned, without further consent. Foremost in Bartholomew’s mind was avoiding the risk of being sued by Mrs Rawson [65/875]. The valuation of the stock, set at £3,000, effectively wiped out Lightning Cities’ debt to Bartholomew.

The clearest description of the settlement is set out in a letter from Bartholomew to Goodman at Waterlow’s on 5 October [65/976]. Once the agreement is signed and the royalty fee paid, Goodman “will collect and dispatch the whole of their stock, including unbound letterpress and covers, to our works in Edinburgh, excepting only the London Map which will be retained pending our further instructions.” Furthermore Bartholomew would make a cash payment to Waterlow of £500 in return for their surrendering their lien on the goods, and would make additional payments over the next three years proportionate to future sales of the map. By 9 November the stock of the road map had been delivered to Edinburgh [66/124]. Unsold copies held by the agents EJ Larby were considered part of the agreement, and in November a formal request was made of Larby for their return. “Mr Bartholomew is asking our solicitors to send you an

official letter instructing you to dispatch this stock to us as it is our property” [66/167]. Lastly, on 14 December, Bartholomew sent both words of appreciation and a cheque for £500 to VE Goodman at Waterlow’s [66/272].

5. John Bartholomew and the Royal Automobile Club

The final chapter of this saga may be found in the correspondence between Bartholomew and the Royal Automobile Club (RAC). It will be recalled that the initial contract for Bartholomew to supply the RAC with a road map had been signed early in June 1936, when it first seemed possible that the eight sheets of the Lightning Cities map might be available for this purpose.⁴¹ The arrangement had been confirmed before 14 December when we learn of the plan to extend the area covered into Scotland. “The maps of England & Wales could be completed fairly early in the New Year; those for Scotland have not yet been put in hand but could probably be ready for the summer” [66/274]. These would be the seven sheets of Bartholomew’s *Automobile Map of Great Britain* which covered the Scottish mainland, reformatted as the four sheets 9 to 12.⁴² Early in 1937 discussions took place concerning the new RAC cover design to replace the Lightning one,⁴³ and the sheet price, which Bartholomew again were at pains to ensure did not undercut that of their own map. The essential points of their agreement were laid down in a memorandum of 30 March 1937, including the stipulation that the map would be sold direct to its members by the RAC, and to the general public by Bartholomew [66/768-770]. However sheet prices remained a contentious issue for several more weeks. Bartholomew’s letter to the RAC of 22 April is revealing [66/885]:

We are sorry to learn from our London Office that you have not yet seen your way to approve of the prices at which the new series should be sold. When the first of these similar sheets were put out on sale by the Lightning Cities Co. they found a ready market at 3/6d and 6/- [17½p and 30p] respectively for paper and cloth mounted editions. It was felt that a considerable concession had been made, especially in view of the rising costs, when we suggested reducing these prices to 2/6d and 5/- [12½p and 25p] respectively. Compared with the A.A. series they are more up to date. They also have an extra green printing, mileages, index, a general outline road map printed on the back, and a map surface nearly double the area.....In order to meet your views however and to popularise the new map we are prepared to reduce the price of the cloth mounted copies to 4/6d [22½p] each, provided the paper edition remains at 2/6d as previously suggested. This would make the set of 12 sheets on cloth only 54/- [£2.70], a

⁴¹ See above for the letter to EW Larby on 16 June 1936 [65/520].

⁴² The job number 1587 was allocated to these sheets. Work began on them as an internal Bartholomew publication on 24 March 1937, and 5,000 copies of each were printed by 11 August. They were noted in the Order and Cost Book (Acc.10222/321) as publications ‘to complete Lightning Cities series’. Proof copies of all except sheet 11 in this form are in the National Library of Scotland, in the Bartholomew proof maps drawer 18.

⁴³ Both front and back sides of the cover were illustrated in *Sheetlines* 104 (2015), 56.

price which compares most advantageously with that of any other series on the market.

The *Royal Automobile Club Quarter-inch Map* as published was something of a hybrid: sheets south of the border retained their Lightning gazetteers, glued into the front cover in order to hide any reference to Lightning, the Lightning imprint top left on each sheet was covered by a strip of paper glued over the name. But there was no hiding “The Lightning” Road Map of England and Wales on the reverse. The Scottish sheets had no such gazetteers, and no such map on the back, and in place of the Lightning numeric reference system on all sides was an alpha-numeric system, with lettered southing sections each two centimetres in height, this alteration presumably being deemed sufficient to nullify any claim that the Lightning patent had been infringed. Consistency in the actual mapping was achieved with the addition of road mileages into the Scottish sheets. But even the title on the front board of the cover distinguished between *of England & Wales* and *of Scotland*. Copies of the England and Wales sheets were dispatched to the RAC in July 1937, the Scottish ones in August.

6. John Bartholomew and C Arthur Pearson

And what of the Lightning Plan of London? This of course had now become a Bartholomew property. Three letters explain its fate. On 29 October 1936 Bartholomew wrote to Messrs C Arthur Pearson, of Henrietta Street, London WC2 [66/89]:

.....we have pleasure in confirming that in the event of your ordering 1,000 copies of the Lightning Cities Map of London by January 1st, we would be prepared to grant you the sole selling rights for this map for a period of six months, and provided that you took not less than 2,000 during the six months, we would be willing to continue the agency for a further period of six months. The price for paper copies, complete with covers and index, to be 1/4d [ca 7p] per copy, and flat sheet copies of the map 11d [ca 4½p] per copy. We understand that the stock of the complete map is approximately 6,600, and the stock of the sheets approximately 14,700.

The covering note to the London Office commented “They will of course understand that it is quite possible that a certain number of copies will be in the hands of the trade on January 1st. We cannot of course recall these, as in all probability they will not have been supplied by us, though this I do not think will cause any serious objection on Pearson’s part” [66/71]. And on 3 November Bartholomew advised the agents EJ Larby of the proposed arrangement [66/98]:

Referring to our telephone conversation yesterday and your further order today for copies of the Lightning Cities London Map, I should like to confirm that we have offered the sole agency for this map to a publishing firm from the 1st of January, 1937, for a period of six months, with the option of a renewal for a further six months. Therefore, on and after the beginning of next year, we shall be unable to supply you with further copies of this map, though, as I understand the firm in question intend to offer them in some

sort of gift scheme, it is not likely that either yourselves or the retail trade will wish to handle them. I think it only fair that you should know of this arrangement and not be tempted to lay in a stock.

Thus of the original 25,000 it seems that Lightning Cities sold some 3,700 copies in nearly two years. Pearson's had been in business since the late 1890s as a publisher of books, newspapers, magazines and comics, and the sale of a map would seem to have been a new departure for them. This writer knows of no record of how well they succeeded with this one, which by 1937 was already some three years out of date. Copies of the Lightning Plan sold by Pearson are easily identifiable by two labels stuck to the back board, the company name on the one, and the address 8-11 Southampton Street, Strand, London, WC2 on the other.⁴⁴ It is likely that the bulk of the remainder, possibly as many as 20,000 copies, never were sold, but would remain in store at Waterlow's until they were scrapped.

The Lightning Cities and Road Map Company failed to fulfil their legal deposit obligations with both their maps. Their history was terminated on 18 November 1938, when the company was formally "struck off the Register, and hereby dissolved" according to the terms of the Companies Act, 1929.⁴⁵

I am most grateful for the assistance and advice of David Archer, Christopher Board, Heather Hewitt, Yvonne Lewis, Maria Mealey, Richard Oliver, and especially Chris Fleet, of the National Library of Scotland, who kindly ensured that all the relevant documents from the Bartholomew Archive were available to me. The material used from the Bartholomew Archive is with permission of HarperCollins Publishers. I am also very grateful to the National Trust for permission to publish figure 4.

Bartholomew Archive papers, held by the National Library of Scotland

Correspondence files

N.B. each volume of correspondence contains 1,000 letters (sent, not received), whereupon a new volume is begun.

Acc.10222/BR/814: letterbook 62, 15 June 1934 to 16 January 1935

Acc.10222/BR/815: letterbook 63, 16 January 1935 to 6 August 1935

Acc.10222/BR/816: letterbook 64, 6 August 1935 to 5 March 1936

Acc.10222/BR/817: letterbook 65, 6 March 1936 to 8 October 1936

Acc.10222/BR/818: letterbook 66, October 1936 to May 1937

Acc.10222/BR/819: letterbook 67, from May 1937

Bartholomew Printing Record

Acc.10222/PR/83a folio 10: sheets 4 and 5, printed together

⁴⁴ See figure 2. One such copy was donated to the Bodleian Library, Oxford, at C17:70 London d.93.

⁴⁵ *London Gazette* 34571 (18 November 1938), p.7276.

Acc.10222/PR/83a folio 11: England and Wales diagram and gazetteer, two copies printed together

Acc.10222/PR/83a folio 12: sheets 1 and 3, printed together

Acc.10222/PR/83a folio 13: sheet 8

Acc.10222/PR/83a folio 14: sheets 6 and 7, printed together

Acc.10222/PR/83a folio 15: sheet 2

Acc.10222/PR/83a folio 42: 4-page prospectus, printed in sets of four copies

Acc.10222/283: Job Register, 1925-1939

Acc.10222/321: Order and cost book September 1930 to August 1937

Acc.10222/593: Trade record: [vol.] 6 trade, 1933-36

273

Statement

14 December 1936

THE LIGHTNING CITIES & ROAD MAP CO. LTD., LONDON

Dr. to John Bartholomew & Son Ltd -

1935			
May 15	100 ½" Qt. Britain assorted sheets	2:10: 0	
June 5	Fd. Dwg. Index Map for Sections	3: 3: 0	
Dec.31	Compiling 8 indexes & Dwg. 72 Town Plans	386:16: 0	
"	10,000 ea. 8 ½" England Sections; 4,000 ea. mounted etc.	2852: 4: 7	
1936			
Jan.25	51,000 copies 4 pp. Prospectus	<u>50:10: 6</u>	
		<u>£3295: 4: 1</u>	
1935			
March	By Cash	<u>300: 0: 0</u>	
		<u>£2995: 4: 1</u>	
	John Bartholomew & Son Ltd paid to Kenneth Brown, Baker Baker (Royalty £1000; £4:15:11 being difference between s/c and £3000 - purchase price)	1004:15:11	
	John Bartholomew & Son Ltd paid Kenneth Brown, Baker Baker (legal fees)	<u>64:12: 6</u>	
	<u>Balance owing to Messrs. J.B. & Son, Ltd</u>	<u>£4064:12 6</u>	
	Lightning Cities due Waterlow	£1767: 8: 4	
1936			
Dec.	By Cash from Messrs Bartholomew	<u>500: 0: 0</u>	
	<u>Balance owing to Messrs Waterlow</u>	<u>£1267: 8: 4</u>	

Figure 6.

Lightning Cities' statement of account with Bartholomew as at 14 December 1936

[National Library of Scotland, Bartholomew Archive, Acc.10222/BR/818, letterbook 66, 273]

If any reader has a copy of the quarter-inch map in covers, please get in touch with the editor

What three words? A new approach to geo-location

John Davies

Stories in *Sheetlines* in 2010¹ and 2011² drew attention to the problem of providing unique location identifiers where none currently exist. They referred to Eire, which had no official postcodes, a gap the enterprising Gary Delaney exploited with Loc8 codes.³ Subsequently, in July 2015 Ireland's official postcode system, Eircode was introduced.⁴

Now a revolutionary global geo-location coding system has been devised, which is likely to be particularly valuable in remote areas and developing countries without sophisticated addressing systems. Designed by Chris Sheldrick, what3words⁵ is a universal addressing system based on a three metre by three metre global grid. Each of the 57 trillion 3m x 3m squares in the world has been pre-allocated a fixed and unique three word address.

In order to come up with a different combination of three words for each of these 57 trillion squares, 40,000 words are needed (the Oxford English dictionary has over 171,000 words). Each of the 40,000 words is ranked so that shorter and more memorable words are used in places such as city centres, with longer and more obscure words in remoter places.

An automatic geo-coder turns geographic coordinates into three word addresses and vice-versa. The algorithm takes up less than 10MB, small enough to install on almost all smartphones. The app is free to download for Apple and Android devices.

The system is currently rolled out in nine languages: English, French, Spanish, Portuguese, Swahili, Russian, German, Turkish and Swedish. More are added every month, with Italian, Greek, Arabic to follow. The three word address in one language is not a translation of the words used in a different language version.

One unexpected, but delightfully entertaining, feature of what3words is the surprisingly apt word combinations that result. For example, your present reporter, an aging explorer with a hearty appetite, can be found at three possible locations (depending just where at home he is standing), each of which is spookily appropriate: 'alive just keep', 'quite camps much' and 'dinner mostly best'. His walking companion and fellow computer buff JW is at 'laptop hiking worker', whilst PA, his 'partner-in-crime' on many an exploit is at 'guilty wink hiding'.

Let's hear your weirdly wonderful three word address.

¹ Paul Ferguson, 'Postcodes in Ireland', *Sheetlines* 89,16.

² Gary Delaney, 'Loc8 codes – directions made easy', *Sheetlines* 90.38.

³ www.myloc8ion.com

⁴ www.eircode.ie

⁵ <https://what3words.com>



The internal divisions and size of buildings

Paul Bishop

Background and approach

Rob Wheeler's recent cautionary note on the reliability of the mapping of internal divisions on large scale plans is important for those who use OS mapping to interpret building history.¹ As Rob noted, the mapped divisions are "between contiguous houses ... and between parts of a building of different character."² This note examines two buildings in Baldernock Parish near Glasgow – The Mill House (my own house) and South Craigend (a ruined farmhouse) – to assess the 'accuracy' of the mapping of the overall dimensions of these buildings and of their internal lay-outs. I compare on-the-ground measurements of the buildings and their internal divisions with measurements of the same features on the First and Second Editions of the County Series 1:2500 (25-inch) sheets on which these buildings are mapped.

The dates of surveying and printing of these various map sheets are given in the Table of results. The University of Glasgow's printed copies of the two First Edition map sheets that I consulted are later printings than the First Edition digital versions on the National Library of Scotland (NLS) website.³ It is apparent that both of these later 'First Edition' hard-copy sheets were re-drawn prior to printing: the symbols (ornamentation) for various features, especially for moorland and for trees (both deciduous and conifer), have been changed; many labels have changed slightly in position and font; the sizes in acres of the land parcels have been added; some buildings have obviously been redrawn (eg, the footprint of the Parish Church has been modified slightly); and buildings on the re-drawn sheets do not have wall shading. I plan to document these changes in a future *Sheetlines* piece. In terms of the present piece, it appears from careful inspection of the two buildings used here that they have been little altered in the re-drawing, except for the omitting of wall shading on the re-drawn maps. Indeed, and despite the differences between the two versions of the First Edition mapping, both versions depict the South Craigend building in the same slightly skewed, slightly 'parallelogram' form, prompting confidence that the detail of the buildings has not been altered between these two versions.

I used a vernier caliper to measure on the First Edition 25-inch printed map sheets, converting that measurement to on-the-ground size (i) via the notional 1:2500 scale of the maps, and (ii) to account for distortion of the map sheet paper, using the printed bar scale on the map's bottom margin (again with a vernier caliper). I also made the measurements on the scanned map sheets on the NLS website, in two ways. (i) On the digital version of the First Edition sheets, I used the maps 'As individual sheets using a zoomable map of Scotland' and zoomed in on each of the two buildings in turn, to quite high magnification (see

¹ Rob Wheeler, 'Internal divisions in buildings', *Sheetlines* 103, 54-55.

² Richard Oliver, *Ordnance Survey Maps: a concise guide for historians*, Charles Close Society, 2005, 78.

³ <http://maps.nls.uk/>

Table on page 32). A vernier caliper was then used to measure the buildings' dimensions on the computer screen (a desktop with a large flat-screen display), and these were converted to on-the-ground measurements using the bar scale at the bottom of the map sheet (by scrolling down to the sheet's bottom margin, ensuring that I did not zoom in or out on the sheet). If the building outline was shaded (to indicate an upstanding structure), I took three measurements as shown in figure 1, following Richard Oliver's comment that "unfortunately for those concerned with precise measurements, the shading was sometimes drawn along the centre line, and sometimes to one side or the other of the 'true' position of the line".⁴ (ii) On the digital version of the Second Edition of the 25-inch mapping I used the NLS website's built-in map measurer that is included in the option to work with the map 'As a seamless zoomable overlay layer on modern Google and OS maps'. The latter option is not available on the First Edition 25-inch mapping on the NLS website and although the two tests here are based on different editions of the 25-inch mapping they provide guidance as to the consistency and reliability of the mapping. The two tests using the First Edition 25-inch mapping – namely, on printed and scanned map sheets – permit assessment of the two approaches vis à vis on-the-ground measurements.

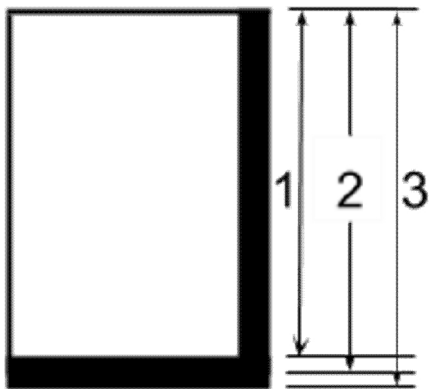


Figure 1.
Diagram explaining the measuring of lengths 1, 2 and 3 on a building with shading (see Table on page 32)

The Mill House (NS 575749)

This traditional stone-built building, probably built in the late 18th century, is mapped on both the First and Second Editions 25-inch sheets as having an internal wall that divided the building into two "parts ... that were accessed of necessity by different entrances"⁵ (*figure 2*). The 1841 and 1851 censuses indicate that the building encompassed two separate dwellings and pre-renovation photographs of the building confirm two entrances (*figure 2A*). The building currently has two internal walls that divide it into three rooms. One of these, a 60 cm-thick rubble-built stone wall, has a low doorway with a simple lintel of obviously old re-used timber, indicating that it has always provided internal communication between two rooms. Hence, that wall would not be expected to

⁴ Richard Oliver, *Ordnance Survey Maps: a concise guide for historians*, Charles Close Society, 2013, 39. Rob Wheeler has kindly pointed out that the same point is made on p 65 of the 2005 edition of Oliver's *Concise guide*.

⁵ Wheeler, op. cit. 54.

have been mapped. The second internal wall is brick-constructed and has a 'normal' height doorway and it seems that that wall might have been replaced when the house was renovated in the 1950s and 1960s. I interpret that wall to be the one that is mapped on the 19th century 25-inch mapping.



Fig 2A.

The Mill House, Baldernock, in the late 1950s or early 60s, prior to renovation. Note the two entrances (doorways)

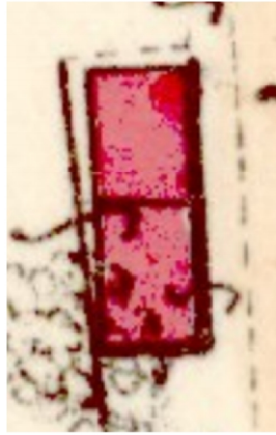


Fig 2B.

The Mill House on mid-19th century First Edition 25-inch mapping (1864), showing the internal division



Fig 2C.

The Mill House on the Second Edition 25-inch mapping (1897)

South Craigend ruined farmhouse (NS599759)

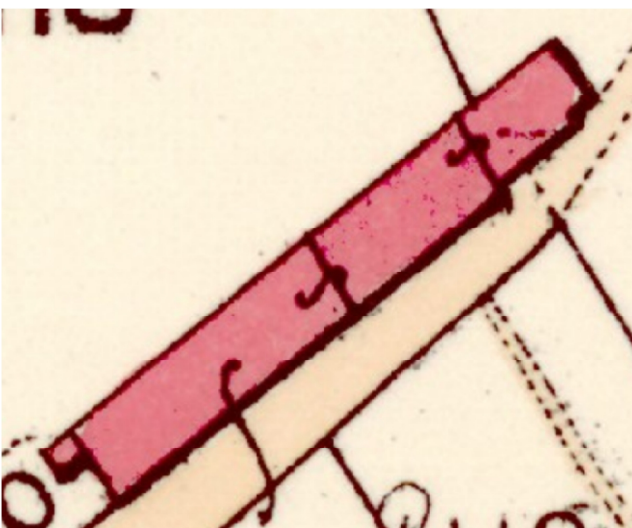


Fig 3A.

South Craigend farmhouse on the First Edition 25-inch mapping (1865) when it was still occupied, and indicating three main parts of the building (plus a small fourth room at far bottom left). The three main parts presumably each had separate outside doors.

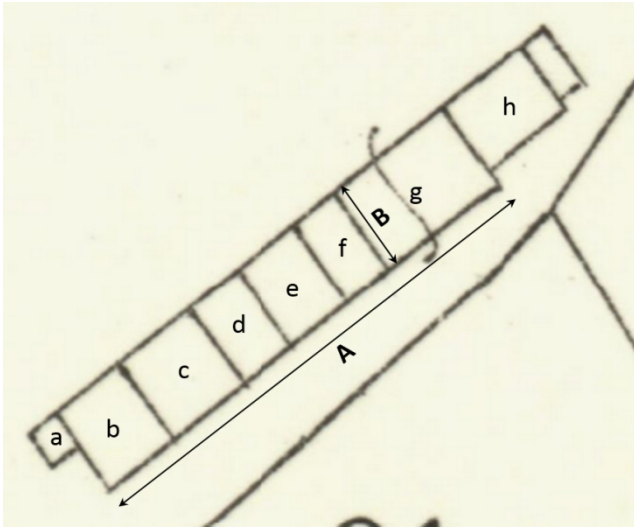


Fig 3B.

South Craigend farmhouse on the Second Edition 25-inch mapping (1898) by which time it was unroofed. Cells a to h as mapped here were identified in Niall Logan's field survey (see footnote 6). The A and B annotations are the dimensions that were measured for this assessment. In all cases, dimensions were measured from the outside edges of the walls.

South Craigend (*figure 3*) was a long, stone-built farm building comprising a single dwelling and associated conjoined farm buildings, representing an example of the second rationale for mapping internal divisions (“parts of a building of a different character”). Logan has documented the building’s structure and occupation, showing that it was occupied at the 1871 census but did not figure in the 1881 census.⁶ It was thus unroofed between the 1871 census and the 1896 survey for the Second Edition 25-inch map,⁷ which is consistent with it being shown as “now demolished” on a mine abandonment plan that must post-date 1868.⁸ The 1896 survey shows that it consisted of six cells in the widest part of the house (cells b to g in *figure 3B*), two narrower cells on the north-eastern end, and a small cell at the south-western end. Two dimensions of the building were measured on the ground and the maps (A and B on *figure 2B*).

Reliability of the buildings’ mapped dimensions

All building dimensions measured on the First and Second Edition 25-inch sheets (see *Table*) are within 7% of their on-the-ground measured lengths, except for two: the length of the northern ‘half’ of The Mill House, and the width (dimension B) of South Craigend farm. The on-the-ground length of The Mill House’s northern ‘half’ is 8-15% greater than the mapped lengths (see below), and the width of South Craigend is 19-48% less than the mapped widths. The latter seems to have been a mistake in the original mapping of South Craigend that has been carried through in subsequent editions.⁹

⁶ Niall A. Logan, ‘South Craigend and Cornhill: Reading the Ruins’, *Vernacular Building* 38 (2015), 55-72.

⁷ *Ibid.*

⁸ Mine abandonment plan “Tracing of Woodhead BBI workings (S Craigend)” NS67NW/13, lodged at the British Geological Survey, Edinburgh.

⁹ Both Niall Logan and I have independently measured South Craigend farmhouse’s width (dimension B) and the mapping does not match that width. The farmhouse walls are rubble-built stone about 60 cm thick and it is certain that they would not have been moved to increase the width of the building after its initial mapping.

Reliability of the mapping of internal divisions

The map and measured lengths of The Mill House's northern part mean that the building's internal division has apparently been either incorrectly mapped or moved from its mapped 19th century position. The wall's brick construction (the other walls in the house, including the second internal wall, are all of stone about 60 cm thick), its high doorway opening, and, as already noted, the low height and obviously 'old' construction of the house's other internal doorway, all suggest that the brick wall that marks the internal division might be more modern than the house, and that it has been moved (perhaps when the house was renovated in the 1950s and 60s). It is also possible that it was mapped incorrectly. Is it possible that the surveyors were denied access to the house and the internal wall was simply placed so as to divide the house into two equal parts? There is no chimney or change of roof line corresponding to the mapped internal wall.

Recent field survey and measurement of the ruinous South Craigend farm confirm that the Second Edition mapping of its internal divisions is correct (*figure 2B*).¹⁰ It might be unexpected that the internal divisions of a ruined building are mapped because, as Richard Oliver has noted, "ruins are shown by their outer walls only."¹¹ Perhaps that mapping protocol post-dates the 1898 survey of South Craigend. This farm always included only a single house and so the mapped divisions on the First Edition must be between parts of a building of a different character (e.g., between home and farm building). Logan's survey demonstrates that cell g in *figure 2B* was the dwelling with a large, elaborate fireplace and hearth in an 80 cm-thick wall between cells f and g, which do not have a connecting doorway. However, the mapped division on the First Edition corresponding to the dwelling encompasses cells f and g (*figure 2*), and so either that division is incorrectly mapped or cell f was part of the dwelling but was reached by its own doorway (either from the outside or from cell e, both of which doorways have been identified by Logan as possible). In that case, part of the dwelling (cell f) has a separate doorway and no communication with the main part of the dwelling (cell g) but it is mapped on the First Edition as part of the dwelling.

Concluding comment

Rob Wheeler's discussion of internal divisions sounded a warning against too strong a reliance on the mapping of these divisions when interpreting the history of a building. This warning is reinforced by the material presented here, and the measurements also signal some caution. Taking the latter point first: by-and-large, the mapped dimensions of the two buildings are 'correct', given the potential distortions associated with engraving and printing the maps and the subsequent shrinkage and expansion of the map sheets themselves. Printed and measured dimensions are within $\pm 6\%$ of each other, with the mapped dimensions being

¹⁰ Logan, op, cit..

¹¹ Richard Oliver, *Ordnance Survey Maps: a concise guide for historians*, Charles Close Society, 2005, 39.

both larger and smaller than the measured dimensions, and there being a slight bias towards the mapped being smaller than the measured.

For South Craigend, the various mapped lengths are all less than the measured length, up to a maximum of 7%, but all mapped widths are substantially greater than the measured width, signalling a probable error in mapping. Where map measurements have been on walls with shading, the measurement to the middle of the shading appears to be closest to the on-the-ground measurement, confirming in this case that, as Oliver has noted, shading was usually applied “equally on either side of the line being emphasized”.¹²

The mapped internal divisions in both buildings present one issue or another. The Mill House’s internal division appears to have moved since mapping, and those of South Craigend farm are broadly ‘sensible’ but have issues attached to them in detail. The key conclusion appears to be to treat mapped internal divisions with caution.

Acknowledgments

I thank Niall Logan for helpful discussions about South Craigend and Rob Wheeler for essential guidance on checking on different printings of the maps. The University of Glasgow’s Sonny Maley and Elaine Anderson (Maps, Official Publications and Statistics Unit) and John Moore (Map Librarian) kindly provided access to the relevant map sheets. The National Library of Scotland’s on-line maps continue to be a superb and invaluable resource.

Table of measured lengths of The Mill House and South Craigend farm, Baldernock, on 25-inch map sheets and ‘on-the-ground’

The Mill House

Stirling Sheet XXXII.2	<i>Measuring technique</i>	<i>Wall shading</i>	<i>On-the-ground length (m)</i>	<i>On-the-ground length (m) North room</i>
Measured length	30 m tape		14.85	8.21
1st ed 25" hard copy (OS annotation: <i>Zinco-graphed & Published 1893. Surveyed in 1860. Railway inserted in 1868</i>)	Vernier caliper	No wall shading	Ratio scale 15.63	7.38
			Map bar scale 15.74	7.31
1st ed 25" NLS on desktop computer (<i>Survey date: 1860 Publication date: 1864</i>) Size of symbol 110mm	Vernier caliper	1	14.32	7.00
		2	14.78	
		3	15.12	

¹² Oliver, op.cit., 2005, 65.

2nd ed 25" NLS on desktop computer (OS annotation: <i>Surveyed in 1860, Revised in 1896. Zincographed and Published 1898</i>) Size of symbol 110mm	Digital measurer	1	14.59	7.53
		2	14.92	
		3	15.22	

South Craigend

Stirling Sheet XXVII.15	<i>Measuring technique</i>	<i>Wall shading</i>	<i>Length A (m)</i>	<i>Length B (m)</i>
Measured length	30 m tape		42.65	5.85
1st ed 25" hard copy (<i>Zincographed & Published 1893, Surveyed in 1859 & 1860</i>)	Vernier caliper	No wall shading	Ratio scale 41.00	8.63
			Map bar scale 40.81	8.58
1st ed 25" NLS on desktop computer (<i>Survey date: 1860 Publication date: 1865</i>) Size of symbol 100mm	Vernier caliper	1	39.80	6.96
		2		7.45
		3		7.61
2nd ed 25" NLS on desktop computer (<i>Surveyed in 1859-60, Revised in 1896. Zincographed and Published 1898</i>) Size of symbol 100mm	Digital measurer	No wall shading	41.60	7.98

Rob Wheeler adds: While there is little evidence of distortion of the paper copy – I believe that shrinkage is predominantly an issue with engraved maps printed on dampened paper – the digital image has shrunk in a north-south direction by as much as 7% (Mill House). This I believe is an issue with such digital measurements: the scale may be reliable for the direction in which it is printed, but is not reliable for the direction perpendicular to that.

***Merely a question of boundaries
Part two – a consensus reached?***

David EM Andrews

In part one,¹ I wrote on the subject of whether the position of an administrative boundary on a large scale Ordnance Survey map could be used as evidence of the position of the boundaries of the private properties on both sides of the administrative boundary.

I asked for expressions of opinion on the subject, and I have received responses from John Cole, Richard Porter and Pete Bland.

John Cole provided me with an extract from *Notes on CB, Parish and other boundaries*, (Ordnance Survey, 1934), which is included at Appendix 1 below.

Richard Porter tracked down a record of the Coleman v. Kirkaldy case referred to in my original article. The *Weekly Notes* of cases dated 1 July 1882 contains a very short summary of the case. I have reproduced the summary at Appendix 2. It is interesting that Coleman v. Kirkaldy was a “light and air” case. The relevance of the case to the property boundaries is unclear, and there is no reference to the private property boundaries being anywhere near to an administrative boundary. This only deepens the mystery of why the case is cited in the way that it is.

Richard also pointed out that the decision by OS not to mere new administrative boundaries to private property boundaries was commented upon by Chris Simmons in *Sheetlines* in 1988.²

Pete Bland provided an extract from Halsbury’s *Laws of England* which I have reproduced at Appendix 3. It would appear that Halsbury has fallen into the trap of using the citation of the Coleman v. Kirkaldy case as a catch-all, and not recognising the exception when an administrative boundary has been mered to coincide with a private property boundary.

Since writing the original item I have delved into the website of Jon Maynard,³ a retired OS employee who is now a self-employed boundary surveyor with an enviable reputation. With his permission, an edited extract is at Appendix 4.

To summarise, nothing that I have read in these documents leads me to change the opinion I expressed in the original article.

In fact Jon Maynard’s website content positively reinforces my opinion.

It would seem that citing Coleman v. Kirkaldy as evidence that “*Ordnance Survey maps are not evidence as to the boundaries.....between private owners.....*” is a little flawed.

What chance is there of revising this example of case law to include an exception to the generally cited rule when an administrative boundary has been mered in the past to coincide with a private property boundary?

¹ *Sheetlines* 103, 31-39.

² *Sheetlines* 22, 2-3.

³ <http://www.boundary-problems.co.uk/Jon-Maynard-Boundaries/jmb-about.html>

*Appendix 1**Extract from Notes on CB, Parish and other boundaries, OS, 1934*

PROPERTY RIGHT.

80. The O.S. does not generally concern itself with property rights further than is necessary for ascertaining parish and other public boundaries, which, usually, follow property boundaries. Property rights extend three, four, or five feet, &c., beyond the fence into the adjoining land, according to the custom of the county or district, or special circumstances, and in most cases of ditched-fences are defined by the outer edges of the ditches. Exceptions, however, exist, *e.g.*, free-boards are sometimes ditched on the contrary side of the fence.

The owners of property right can, as a rule, appropriate this space for any purpose they choose.

Occasionally, local authorities object to the insertion of property-right to new boundaries fixed by reference to Deposit maps; deeming the outer edge of the colour band on the map the true legal boundary line. Such cases are, in the first instance, reported by the Reviser on the ground to the Division Officer, who refers them to the D.G., through O.C., for decision as regards the course to be taken on the O.S. map concerned.

In the case of boundary alterations under the London Government Act, 1899, and in connection with which the deposit maps were prepared on O.S. 5 ft. impressions, the Local Government Board considered that the edge of the colouring thereon definitely determined the limits of the transferred areas, and no property-right beyond that is admissible.

Where there are two adjacent fields separated by a hedge and ditch, the ditch *primâ facie* belongs to the owner of the field in which the hedge is, and if there are two ditches—one on each side of the hedge—then the ownership of the hedge must be ascertained. The rule about ditching is this: "No man making a ditch can cut into his neighbour's soil," but usually he cuts it to the very extremity of his own land; he is, of course, bound to throw the soil which he digs out

upon his own land, and often, if he likes it, he plants a hedge upon the top of it; therefore, if he cuts afterwards beyond the edge of the ditch, which is the extremity of his land, he cuts into his neighbour's land, and is a trespasser.

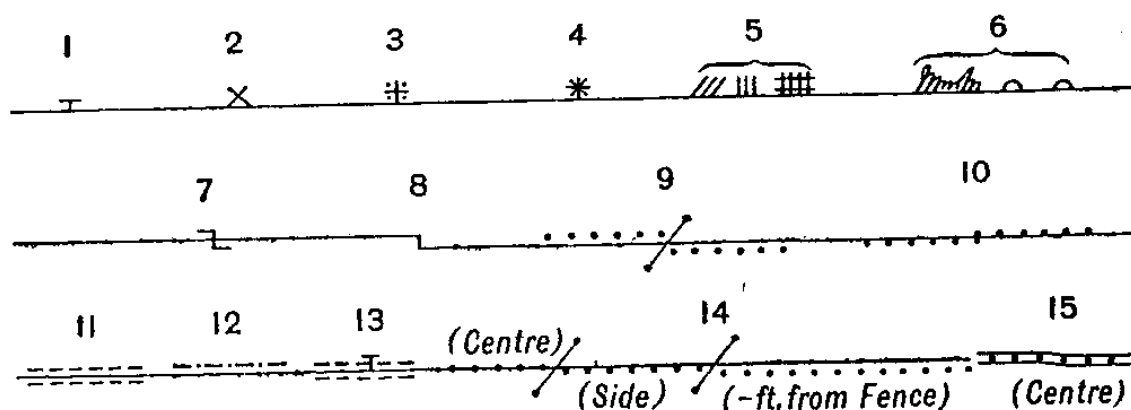
Where an inclosure adjoins the public highway and a ditch is made outside the inclosure, and between it and the highway, the ditch is parcel of the inclosure. On the other hand, where the highway is, or was, a turnpike road, and the soil thereof was originally vested in the road trustees, it may be that the ditch has been constructed by them, and that it remains parcel of the road, and is not parcel of the adjoining inclosure at all.

Mereings on O.S. maps show to which field or inclosure the boundary fence (with or without a property-right, as enquiries may decide) belongs, whether or not the land on both sides is owned or occupied by one and the same person.

Fences to woods, especially old woods, are, as a rule, maintained by the owner or occupier of the wood, rather than by the owner or occupier of the adjoining lands, and are, therefore, mered accordingly on Ordnance maps, unless it is known that the repairing and the property-right boundaries differ, in which case the latter is adopted.

When the property on both sides of a feature that is not ditched belongs to one and the same person, the owner, tenant, or agent, as a rule, can decide as to which side of the feature the boundary should be drawn. If, however, no such decision can be obtained, and neither the inclosure award nor estate map affords the necessary information, the mereing "C.H." or "C.F." is adopted for Ordnance Survey purposes.

Inclosure Awards usually contain special provisions as to the ownership and maintenance of boundary fences, and, also, specify the dimensions of ditches and spaces allowed for ditching and banking of new inclosures. Many Tithe and Estate maps also indicate the ownership of fences either by colour edgings or by symbols placed on or against the feature, as illustrated in the following examples:—



Nos. 1, 2, 3, 4, 5, and 6 of the above examples, also colour edgings, usually denote that the fence belongs to and is repairable by the owner of the property in which the symbol is shown.

The real significance of No. 11 can, however, only be ascertained by inspection of the boundaries generally on the map on which it is used, for although ordinarily the symbol denotes that the fence is the joint property of the adjoining owners, yet, on many maps, it is used merely to indicate that the fence is a boundary fence. In No. 13 the addition of the T makes it clear that the boundary fence belongs entirely to the property in which it is placed.

Nos. 7, 8, 9, and 10 show different methods of marking the precise point at which ownership of the fence changes from one side to the other.

On all modern Ordnance large scale maps the boundary character . . . (or — — —) (Nos. 9, 10, 12, 14, and 15), are invariably drawn on the boundary itself, following accurately any property-right appertaining to the fence (*e.g.*, 4 ft. or 20 ft.), and the field computations of acreages are prepared accordingly.

Appendix 2

Extract from Weekly Notes of cases Heard and Determined July 1, 1882

Kay, J.,

COLEMAN *v.* KIRKALDY.

June 26.

Evidence—Ordnance Map not admissible to shew Boundary of Premises.

This was a light and air action, with witnesses. The premises of both parties had been rebuilt. The plaintiff complained that the new building of the defendant infringed upon his right to access of light. The defendant denied that the plaintiff's windows were ancient.

W. Pearson, Q.C., and D. Alexander, for the plaintiff.

Hastings, Q.C. (with him E. Cooper Willis, Q.C.), for the defendant, during the examination of a witness on his behalf, proposed to put in as evidence a copy of the ordnance map to shew the boundary of the premises of the parties, and he re-

ferred to the dictum of Lord Justice Blackburn in the case of *Spike v. Thompson*, tried at the Winchester Assizes in July, 1875, to the effect that the ordnance map was *primâ facie* evidence.

KAY, J., after referring to Stephen's Digest on the Law of Evidence, 3rd Edition, article 30, and to the cases of *Wilberforce v. Hearfield* (5 Ch. D. 709), and *Hammond v. Bradstreet* (10 Ex. 390) said he thought that an ordnance map did not stand any higher as evidence than a tithe commutation map, which in the former case was held not to be admissible in evidence as shewing the boundary of land in a case of disputed title, and therefore he should hold in this case that the ordnance map was not admissible as evidence.

Held also, that as upon the evidence the plaintiff had failed to shew that any portion of his ancient windows corresponded with the windows in the new building, the action must be dismissed with costs.

Solicitors: *Ralph Watson ; Keene, Marsland & Bryden.*

Appendix 3

Halsbury's Laws of England / Boundaries (volume 4 (2011))/2. evidence of boundaries/(2)

Particular kinds of evidence/(ii) Hearsay Evidence/337. Published works.

337. Published works.

Under the preserved common law rule,¹ published works dealing with matters of a public nature (for example, histories, scientific works, dictionaries and maps) are admissible in civil proceedings² as evidence of facts of a public nature stated in them.³ Thus standard atlases and maps may be used to prove facts of public knowledge.⁴

An Ordnance Survey map to which no reference is made in the title deeds⁵ is not admissible⁶ to show the boundary of a parish⁷ or the boundary between the lands of adjoining owners,⁸ because when power was conferred to complete the Ordnance Survey of Great Britain it was expressly provided that this power was not to extend to the ascertaining or alteration of local or private boundaries and that titles to land were not to be affected.⁹ However, an Ordnance Survey map may be received in evidence¹⁰ to show the position of the median line of a river¹¹

or of some physical object existing at the time the map was made,¹² such as the existence or otherwise of a track across land.¹³

A county history giving the boundaries of a county was not admissible under the common law rule as evidence of the boundaries of a manor even though they were admittedly coterminous in part with the boundaries of the county.¹⁴

A book of general history may be given in evidence to ascertain ancient facts of a public nature¹⁵ but not particular customs or private rights.¹⁶

1 As to the preservation of the common law rule see note 3; and PARA 336.

2 As to the meaning of 'civil proceedings' see PARA 335 note 1.

3 See the Civil Evidence Act 1995 s 7(2)(a); and *Civil Procedure* vol 11 (2009) PARA 820. Section 7(2)(a) provides that the common law rule effectively preserved by the Civil Evidence Act 1968 s 9(1), (2)(b) (repealed) is to continue to have effect after the repeal of that Act. See also PARA 336; and *Civil Procedure*.

4 In *R v Orton* (1874) Stephen's Digest of the Law of Evidence (12th Edn) p 56, maps of Australia were given in evidence to show the situation of places where the defendant said he had lived. In *Birrell v Dryer* (1884) 9 App Cas 345 at 352, HL, per Lord Blackburn, the court accepted an Admiralty chart as evidence. As to maps and plans as evidence see further PARA 342.

5 See *Wakeman v West* (1836) 7 C & P 479 (old leases produced from bishop's registry read in evidence but an old map produced from the same custody but not referred to therein was not admissible under the common law rule). See, however, PARA 335. See also *Plaxton v Dare* (1829) 10 B & C 17 (ancient leases admissible as evidence of a parish boundary).

6 Ie under the preserved common law rule: see the text and notes 1-3. Nor is it admissible under the preserved common law rules relating to public documents (see PARA 338) or evidence of reputation (see PARA 340). See, however, PARA 335.

7 *Bidder v Bridges* (1885) 54 LT 529.

8 *Tisdall v Parnell* (1863) 14 ICLR 1 at 27-28; *Coleman v Kirkaldy* [1882] WN 103. See *Swift v M'Tiernan* (1848) 11 I Eq R 602; *Mercer v Denne* [1905] 2 Ch 538, CA.

9 See the Ordnance Survey Act 1841 s 12; PARA 308; and *National Cultural Heritage* vol 77 (2010) PARA 1117. As to Ordnance Survey maps as evidence see further *National Cultural Heritage* vol 77 (2010) PARA 1111.

10 Ie under the Civil Evidence Act 1995 s 7(2)(a): see the text and note 3.

11 *Great Torrington Commons Conservators v Moore Stevens* [1904] 1 Ch 347.

12 *A-G and Croydon RDC v Moorsom-Roberts* (1908) 72 JP 123; *Caton v Hamilton* (1889) 53 JP 504.

13 *A-G v Antrobus* [1905] 2 Ch 188 at 203; *A-G v Meyrick and Jones* (1915) 79 JP 515; *Minting v Ramage* [1991] EGCS 12, CA (1838 tithe map admitted to determine whether a highway then existed across a common).

14 *Evans v Getting* (1834) 6 C & P 586; *White and Jackson v Beard* (1839) 2 Curt 480 at 487, 492.

15 *Read v Bishop of Lincoln* [1892] AC 644, PC. See also *White and Jackson v Beard* (1839) 2 Curt 480 at 492 (boundaries of a parish).

16 *Evans v Getting* (1834) 6 C & P 586 at 587n. See also *Civil Procedure* vol 11 (2009) PARA 941.

Appendix 4 – taken from Jon Maynard’s website Administrative boundaries and property boundaries

The Ordnance Survey Act 1841 instructed

“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”.

A book, now out of print, that is the modern authority on administrative boundaries is JRS Booth, *Public Boundaries and Ordnance Survey 1840 - 1980*, Ordnance Survey, Southampton 1980. In it, Booth tells us that

“Ordnance Survey does not concern itself with property boundary as such and no such boundary is marked on plans. However, much public boundary was defined by the property boundary existing at the time of the order making new boundary”.

In amplification of the process Booth writes:

“The O.S. does not concern itself with property right further than is necessary to obtain the mereing for a public boundary. It frequently happens that an administrative boundary follows a feature which defines a boundary between privately owned properties. Where this is the case it is necessary to ascertain a 'property right' in order to position the public boundary which for reasons of administrative convenience should be made to coincide with the private property boundary.”

Booth then states, seemingly illogically,

“Public boundaries shown on OS maps are not evidence of the position of private property limits”

and he cites Section 12 of the Ordnance Survey Act 1841 as his authority for this statement.

“XII. And be it enacted, That 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 decrease, nor 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 ; any Description of any such Land, with

reference to any such Hundred, Parish, or other Division or Place whatever, or otherwise, or any thing in this Act contained, or any Law, Custom, or Usage, to the contrary in anywise notwithstanding.”

Clearly, no survey made by Ordnance Survey can alter the boundaries of privately owned land. But was Booth really correct in claiming that - even in those cases where public boundaries coincide with the private property boundary - “OS maps are not evidence of the position of private property limits”?

In another book, also out of print, JB Harley, *Ordnance Survey Maps: a descriptive manual*, Ordnance Survey, Southampton, 1975, we learn:

*“The legal status of boundaries on Ordnance Survey maps is a matter of practical importance. The basic position is that the publication of such administrative boundaries on various map series has never invested them with any common law or statutory significance in evidence ... The development of case law * has, however, altered the situation ... and the 1:1250 and 1:2500 maps carry a prima facie indication to a Court of Law that a boundary existed at the map position shown, at the time of survey or revision.”*

* Especially Fisher v Winch 2 All ER 144 (Ct. of App. 1939 1 KB 666) and Davey v Harrow Corporation, 1957 2 All ER 305.

Harley goes on to explain the process.

“Because [administrative] boundaries are invisible and cannot be surveyed by direct methods, their precise location in relation to visible ground features is recorded by perambulating the boundary line and 'mereing' it to those features ... The term mereing has also been extended to apply to the written statement indicating the precise relationship of a boundary to the adjacent detail (for example, 4 ft RH = 4 ft from root of hedge).”

It follows that where a dispute arises as to the true position of a property boundary that has also been used to define an administrative boundary, the mereing recorded on the Ordnance Survey map for the administrative boundary is also evidence as to the position of the property boundary at the date at which the administrative boundary order was made. For convenience this is taken as the date of publication or of revision of a published County Series or National Grid map, but that date may be less easy to establish for a post-1990 digital map.

And what are the mereings that may apply as evidence of the position of a property boundary?

CH = Centre of Hedge	0.91m RH = 0.91m from Root of Hedge
CW = Centre of Wall	FF = Face of Fence
FW = Face of Wall	BB - Base of Bank
TB = Top of Bank	EK = Edge of Kerb

A range of distances from a linear feature such as a Root of Hedge or Top of Bank may be applied, 0.91 m (3 ft), 1.22m (4 ft) and 1.52 m (5 ft) being the most common.

Reproduction and influence: two recent publications

Two reproductions of maps were issued in the autumn of 2015 that, as far as I know, break fresh ground, and are templates for similar enterprises elsewhere.

The first, later in origin and of more obviously Ordnance Survey interest, is Richard Dean's *Victorian Biddulph: an Atlas of the Parish using the 1876 Ordnance Survey plans*.¹ Richard is well-known as a map-dealer and sometime editor of *Sheetlines*, and Biddulph has been his home patch for many years. The atlas reproduces in monochrome the whole of the OS 1:2500 first edition mapping of a large (5671 acres; some 23 sq km) parish, and also the accompanying 'Book of Reference', or area-book. The original map was a composite, measuring nearly eight by twelve feet, and housed in the parish church until it was handed over to Biddulph and District Genealogy and Historical Society: in the atlas it has been divided up into A4 sections, with overlaps between openings. Commendable is the attention paid to the gutters, with none of the unsightly underlapping which makes one wonder if some publishers ever look at their books. For the past five years or so Alan Godfrey has put us in his debt by issuing single sheets of the 1:2500 first edition in their original colours: in *Victorian Biddulph* we forgo the colour, but have the land-use information in the area-book, admittedly more important for mapping that is almost entirely 'rural' than it is with the urban-oriented Godfreys, many of which in any case postdate the abandoning of the separate area-books. There is a useful short introduction to the OS 1:2500, and some interesting photos, two or three of which are likely to be new even to seasoned Charles Close Society readers. The one thing to regret is that the lack of colour makes it difficult to distinguish the carmine and grey infills of buildings, denoting their construction, but doing so would probably cost too much for the likely market. Nonetheless, *Victorian Biddulph* is strongly commended as an example to be emulated.

The same can be said of Dennis Mills' *Effluence and Influence: Public Health, Sewers and Politics in Lincoln, 1848-50*.² Thanks to the work of Brian Harley and others the public health mapping of the mid-nineteenth century is much better known than it was at the inception of CCS in 1980, but the large scales employed – usually 1:528 – has militated against much of this mapping being issued in any form. Some of this work was undertaken by the OS, and their 1:528 survey of Warwick was issued in monochrome half-tone at a reduced scale in 1978, which was better than nothing, though not much more can be said.³ *Effluence and Influence* is a step forward. In 1848 Lincoln was threatened with cholera; in September 1849 George Giles made a comprehensive report on the sewerage of the city, and prepared plans at both 1:1584 and 1:3168. Reproduced here are the report, and the 1:3168 plan, in A4 sections, with some additional names supplied, and there is a comprehensive account of the report's background. It may be objected that the map is not entirely original, and owes much to James Sandby Padley's map at the same scale that had been published in 1842 and was reissued in 2004, but Giles betters Padley both by including contours – mostly at 10 feet intervals, which is

¹ Richard Dean (compiler), *Victorian Biddulph: an Atlas of the Parish using the 1876 Ordnance Survey plans*, Biddulph and District Genealogy and Historical Society, 2015: paperback, A4, no ISBN or price, for ordering see www.bdghs.org.uk

² Dennis R Mills, *Effluence and Influence: Public Health, Sewers and Politics in Lincoln, 1848-50*, Lincoln: Society for Lincolnshire History & Archaeology, 2015, paperback, ISBN 978-0-903582-53-7, £12:50.

³ *The town maps of Warwick 1610-1851*, Warwick County Museum Service, 1978.

better than anything OS has offered – and by showing his sewerage scheme, which embraced both existing sewers and new construction.⁴ Similar atlases of towns with OS 1:528 mapping would be welcome.

Richard Oliver

Bus stations on early one-inch Seventh series sheets

John Cole, in *Sheetlines* 103, and Derek Persson, in *Sheetlines* 104, comment on some strange choices as ‘bus stations’ on early one-inch Seventh Series sheets. Part of the explanation may lie in the timing of the decision to show bus stations on the one-inch map. The ‘pilot sheet’ for what became the Seventh Series, 142 *Hereford* (the subject of the Charles Close Society’s latest *Map from the past*), does not include a bus station symbol in its legend. Indeed the decision to include bus stations was only taken around 15-17 February 1950, at a conference on the design for the nascent series: it was decided that where there was ‘a definite bus station’ it was to be included.⁵ So far so good, but by that time 34 one-inch sheets – 78, 100-1, 106-11, 115-20, 127-30, 138-46 and 151-6 – had been completed in the field, and six more – 112, 121-3, 132-3 – were in hand.⁶ Remedial action was necessary to add bus stations to the sheets already revised: presumably a circular was sent from headquarters at Chessington to the field divisions, but I have not located such a document. The work was perhaps undertaken very hastily, and on the basis of ‘if in doubt, include it’. This might account for the two strange examples on sheet 118 (which had been completed on 15 September 1949), but is more questionable for the plethora of bus stations in Leicester on sheet 121, the field revision of which was in hand between 15 November 1949 and 30 June 1950. It is noticeable that far fewer ‘bus stations’ appear on the Lincolnshire sheets revised in 1950-1, which is an accurate reflection of the real situation, and perhaps suggests either a modification to the initial instruction, or greater experience on the ground.⁷ However, the ‘anomalous’ bus stations, such as the two on sheet 118 and the six at Leicester on sheet 121, were left to puzzle map-readers, contemporary and later, until these sheets were subjected to a fresh full revision from 1958 onwards.

In 1961 the instructions to small-scale revisers were to ‘Show and annotate those [bus stations] which are terminals or junction stage points (generally with waiting rooms) from which long distance bus or coach services operate on a regular time-table. Bus garages or depots as such will not be shown.’⁸ Does one detect experience with sheet 118 in the last sentence?

Richard Oliver

⁴ Padley’s mapping is reproduced, in multiple versions, in Dennis R Mills and RC Wheeler (ed), *Historic town plans of Lincoln 1610-1920*, Woodbridge: The Boydell Press for Lincoln Record Society and the Survey of Lincoln, 2004: review in *Sheetlines* 73 (2005), 55.

⁵ Minutes of Conference on Style of 1" Seventh Edition, n.d., c.15-17 February 1950: 86(1)A in The National Archives (TNA) OS 1/785.

⁶ ‘Small scales revision for Seventh Series (‘A’) Edn 1947-1958’, in Ordnance Survey Library serial G.3483: this was lent to JB Harley in the early 1970s for his work on *Ordnance Survey maps: a descriptive manual* (1975), and is not known to have been returned. The writer extracted information from this file in the winter of 1985-6.

⁷ Grimsby and Lincoln, for example, only received proper bus stations in the later 1950s.

⁸ *Instructions for Small Scales Revision (The Green Book 1961)*: copies in TNA OS 45/75 and British Library Maps 207.aaa.15. Earlier small-scale instructions are in TNA: 1948 (‘provisional’) at OS 45/44, 1959 at OS 45/67.

The use by the Great Western Railway of Ordnance Survey maps in preparing land plans

Gavin Johns

Railways required records of land ownership. In the nineteenth century the majority of railway companies produced bespoke land plans of their lines typically at a scale of 2 chains to an inch. These were masterpieces of surveying and cartographic skill. At the time of promoting the railway, plans showing land required and limits of deviation were produced to support the parliamentary process. After authorisation and construction a survey was undertaken and land plan produced to show the completed work. The objective of the land plan was to record ownership, title deeds and other relevant property information and transactions such as disposals. Over time these documents reflected the variety of property activity undertaken by railway companies and ultimately the closure and sale of many routes in the mid-twentieth century.

The land plan's presentational format varied considerably. Some companies favoured large format pages bound into huge – and unwieldy – books. The London Brighton & South Coast Railway, and Merthyr, Tredegar and Abergavenny branch of the London & North Western Railway fell into this category. Others adopted smaller page formats and sometimes strip format bound in 'concertina' books.

In the early years bespoke surveys were favoured, with little direct use of Ordnance Survey products.

There were some notable exceptions, for instance the Great Eastern Railway used Ordnance Survey 1:2500 plans to form the base of the plan. Ordnance Survey sheets were cut into strips (11" wide) and then annotated with parish and county boundaries, title deed boundaries and plot numbers.

In addition, other railways used, for example, bound folios of plans at 1:500 (41.66 feet to one inch) or 1:2500. A folio produced for the Midland Railway (MR) comprises five of the nineteen sheets published in 1886 of the town plans for Stamford in Lincolnshire. The folio is stamped 14 March 1907. It is assumed that this folio was produced for commercial purposes, as a land plan to the usual MR format (page size 32" x 21" at a scale of 2 chains to an inch) had been produced.

The grouping of the railways in 1923 under the terms of the Railways Act, 1921, caused overnight a substantial change in property ownerships. Four large companies were created: London Midland & Scottish Railway (LM&SR), London North Eastern Railway (LNER), Southern Railway (SR) and the Great Western Railway (GWR). In the early days after grouping the task of integrating the component companies into one large new company was immense and one aspect not overlooked was the need for new land plans. Some companies (LNER, SR and LM&SR) integrated the records of the old companies augmenting them with new plans as required. These new plans were based on Ordnance Survey 1:2500 sheets. The LNER, for example, commissioned land plans for the Great Northern Railway (GNR) area using Ordnance Survey 1:2500 maps, showing property ownership with green tint (but not title deed information, original GNR

records had to be used to find that) and the application of printed station name labels to the plan.

The GWR solution was different.

The GWR had prior to 1923 followed the same approach as other companies. Bespoke surveys, and meticulously drawn '2 chain' land plans produced on large sheets but then bound on linen in a concertina form (6" x 12") for use in offices. This format had been produced for at least the preceding 40 years.

An example of a 1908 plan at Defiance Platform, Saltash, Cornwall, is shown in figure 1.¹

Grouping overnight presented a formidable task of integration. The companies absorbed by the GWR are shown in Table 1.²

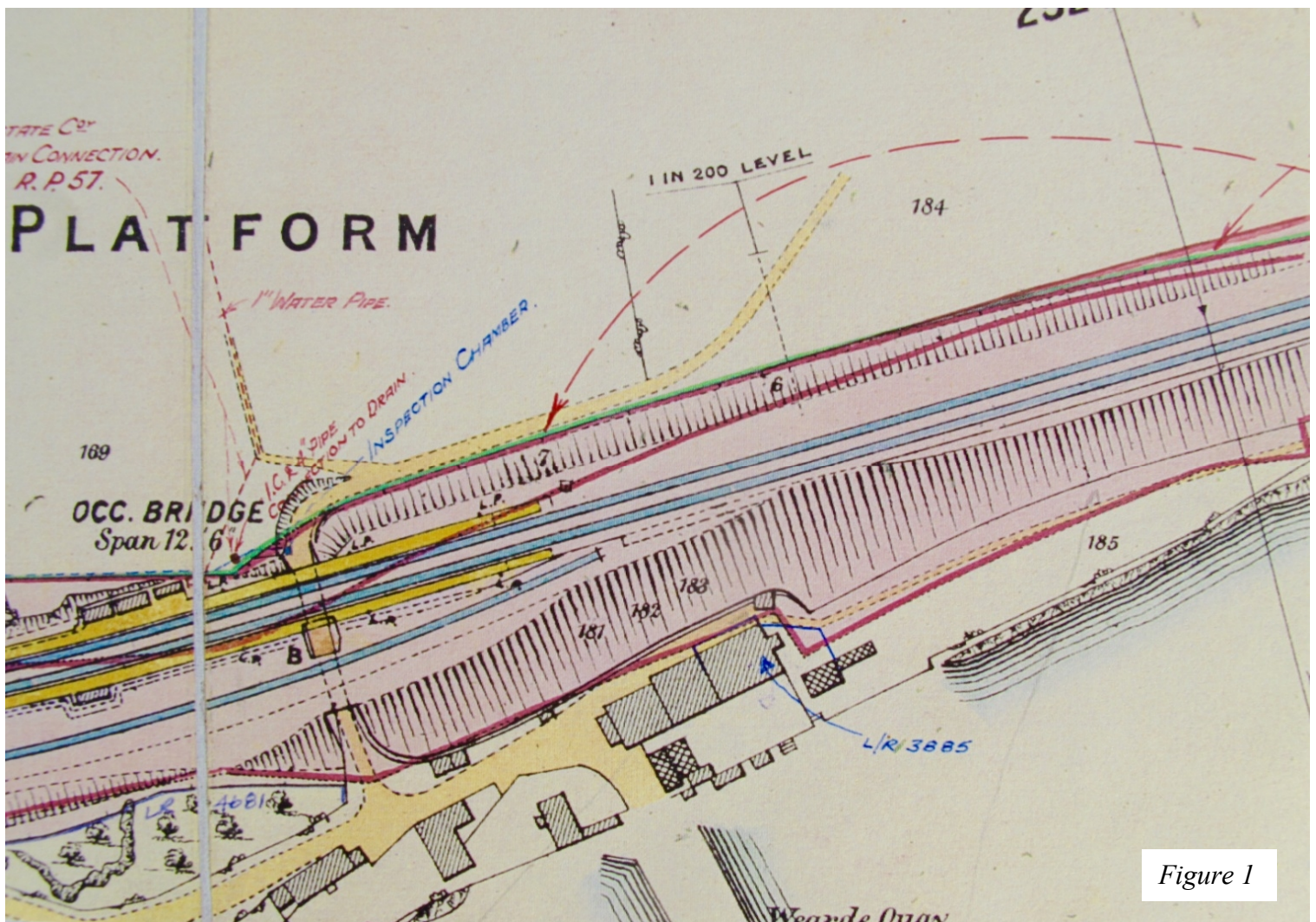


Figure 1

¹ All extracts are from copies held in a private collection.

² Source: Railway Gazette, GW Staff Magazines and line histories.

Table 1

Company	Route mileage	Date of acquisition of Company by GWR	Land plan OS corrected date
Alexandra (Newport & South Wales) Docks and Rly	19	1 Jan 1922	1931
Barry Rly	68	1 Jan 1922	1925 - 28
Cambrian Railways	300	1 Jan 1922. Van, Mawddwy and W&LLR: 1 Jan 1923	1922 - 33
Cardiff Rlys	12	1 Jan 1922	1931
Rhymney Rly	51	1 Jan 1922	1931
Taff Vale Rly	124	1 Jan 1922	1929 - 1933
Didcot, Newbury & Southampton Rly	45	1 Jan 1923	Not known
Exeter Rly	8	1 July 1923	1927
Forest of Dean Central Rly	5	1923	1881
Lampeter, Aberayron & New Quay Light Rly	12	1 Jan 1922	Not known
Liskeard & Looe Rly	9	1 Jan 1923	1909 2 chain
Princetown Rly	10	1 Jan 1922	c1890
Ross & Monmouth Rly	13	1 Jan 1922	Not known
Teign Valley Rly	8	1 July 1923	1927
West Somerset Rly	14	1 Jan 1922	Not known
Brecon & Merthyr Tydfil Jn Rly	60	1 Jan 1922	1929
Burry Port & Gwendraeth Valley Rly	21	1 Jan 1922	1926
Cleobury Mortimer & Ditton Priors Light Rly	12	1 Jan 1922	Not known
Gwendraeth Valley Rly	3	1 Jan 1923	1926
Llanelli & Mynydd Mawr Rly	13	1 Jan 1923	1924
Midland & South Western Junction Rly	61	1 July 1923	1928
Neath & Brecon Rly	40	1 Jan 1922	1925
Port Talbot Rly & Docks	33	1 Jan 1922	1927
Rhondda & Swansea Bay Rly	29	1 Jan 1922	1914 2 chain
South Wales Mineral Rly	12	1 Jan 1923	1925

There was only one acquisition after 1923.³

Table 2

Company	Route mileage	Date of acquisition
Corris Railway (incl. Ratgoed tramway)	10 (incl. Upper Corris branch)	1930

In addition, after grouping some new lines and major works were built (eg the Westbury and Frome cut-offs). Land plans were produced for these.

The size of the task facing the GWR was huge. It is not clear what criteria determined the sequence of preparation of new GWR plans. It may be that the condition of the absorbed company records was the main factor. In any event little material from the pre-grouping companies appears to have survived. A parallel action and perhaps symptomatic lesson can be drawn from the GWR treatment of absorbed company locomotives where many of the older locomotives were quickly withdrawn and replaced by standard GWR types or, where economic, rebuilt using standard GWR parts. Driving this was a need to reduce costs, and standardisation was seen as one way to achieve this. Perhaps this logic permeated through to land plan production as well.

Nevertheless, the preferred solution was to commission new land plans for most routes embarking on the programme with remarkable speed, the first surveys and land plans being produced in 1923.

The new land plan specification was:

1. scale 1:2500, a change from the 2 chain
2. a correction of the OS base: the customisation emphasising railway features
3. typically only showing the railway and land about 130 yards either side of the line, although this varied significantly if there were goods yards, outlying property and rights of way
4. retention of the existing well proven land plan colour scheme:

Table 3

Feature	Colour
Title deed plot boundary	Red line
Station platforms	Yellow
Rail track	Blue
Roadways	Light brown
Land in Company occupation	Light pink
Slopes	Dark brown feathering (on 2 chain sheets drawn on engraving/lithograph) later engraved in black.
Water	Edged and coloured blue (previously shaded blue)

³ Source: Railway Gazette.

Parish and County names were prominently displayed, and on later surveys reference to adjacent railway land plans made. This was especially useful in South Wales, where many lines were in close, and confusing, proximity.

Plans were annotated: 'NOTE: This Plan is based on the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office.'

The outcome was a land plan as shown in figure 2.

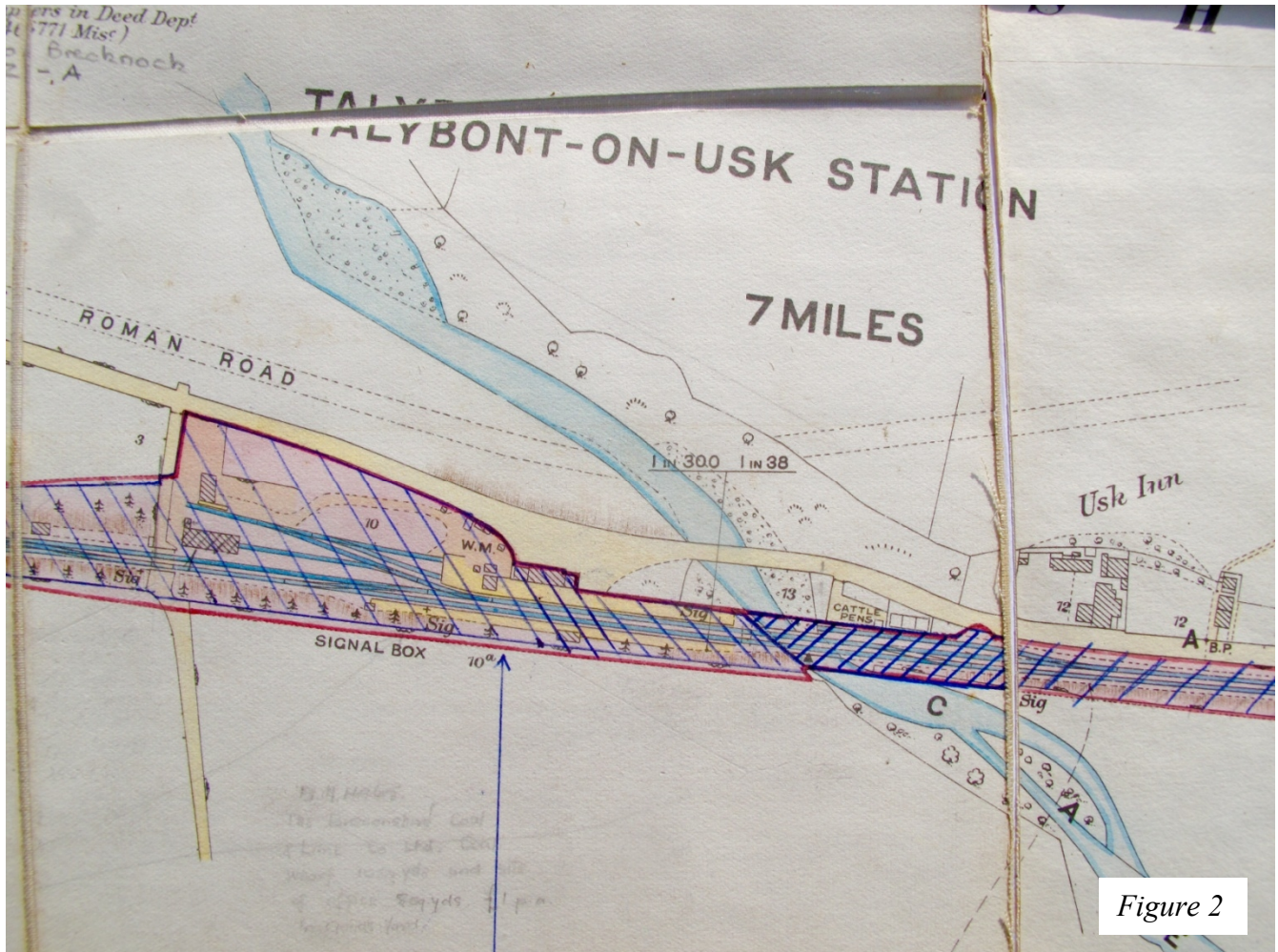


Figure 2

We will look later at in detail at an example of this approach. The outcome was, in my opinion, a most attractive final product and one that was a pleasure to use in the field.

A rail route would be shown on a number of sheets. The sheet size was 42" by 27" (comparable with the size of an Ordnance Survey 1:2500 sheet). Each sheet showed about two to three miles of route normally in two strips, top and bottom. This would vary if the route was curvaceous, or large features such as marshalling yards or docks needed dealing with.

An example of the sheet layout shown in figure 3. This is part of the Barry Railway line between Barry and Pontypridd. (This sheet was produced to show land for disposal after closure of the railway in 1963. It has been annotated with information from the local permanent way gangers to show adjoining land owners).



Figure 3

For a line such as the Whitchurch to Pwllheli line of the Cambrian Railways, this resulted in forty-five sheets for the 132.75 miles. The Aberystwyth branch was shown on six sheets for the 16.5 miles from Dovey Junction. The concertina binding format (6" x 12") was continued for the new routes. For the Whitchurch to Pwllheli line this resulted in six volumes.

Inside each volume a label was pasted, stating:

GREAT WESTERN RAILWAY.

MEMO to be affixed to each of the new surveys.

This Plan is to be kept by the Heads of Departments for their own use only. It is not to be produced, nor is any part of it to be copied for information of Owners of adjoining property or others.

Care has been taken to make the Plan as accurate as possible, but there is reason to doubt whether it can in all cases be relied upon.

If cases should arise as to the rights or Title of the Company, the Plans to the Title Deeds must alone be relied upon to supply the necessary information.

[Name],
Secretary.

and a hand entered date stating when the volume first entered into use. We can see therefore the date of survey/production (the Ordnance Survey Correction date) and the date the line plan was released for use. Occasionally there are significant gaps between survey and completion.

A number of companies were used to do this work. The majority were printed by Cook, Hammond & Kell, some by Vincent Brooks, Day & Son, London WC2.

What did Ordnance Survey Corrected mean? The latest OS 1:2500 sheets were used as the base. Correction meant limiting updating railway features on the OS plan to reflect the railway at that point in time, then railway specific data was enhanced or added: station names and title deed information, county and parish boundaries, mile posts, details of structures. The colour was applied by hand.

An example of how this worked is Towyn (now Tywyn, Gwynedd). After the grouping, the GWR quickly implemented the recommendations from the investigation into the Abermule accident in 1921, where two trains collided head-on on a single track line. Changes in the way signalling and train working equipment were located on the Cambrian Railways were required, and the GWR promptly set about building a new central signal box at Towyn. The new box opened in July 1923. The OS Corrected land plan dated 1923, shows the new box and the two older boxes removed. Similarly the Welsh Highland Railway at Portmadoc opened on 1 June 1923 is shown in full. So the plans could show the up-to-date position.

The overall programme was put in hand quickly but the final plans were only produced some eleven years later. Table 1 indicates survey production dates (Ordnance Survey corrected). It is not clear what determined the overall programme. It certainly wasn't based on commercial importance, as the Taff Vale Railway for instance, was very late in the overall programme. In some cases provisional surveys comprising of 1:2500 sheets cut and mounted on linen, were produced in concertina form to cover the period before final plans could be produced.

Again, there were exceptions. The 1929 survey of the Brecon & Merthyr line between Newport and New Rhymney was produced at a two chain scale. The remainder of the line to Merthyr and Brecon was produced to the new post-1923 specification.

Some minor lines (Van or Mawddwy Rlys of the Cambrian Railways) or some of the narrow gauge lines taken over by the GW did not get the same methodical treatment, whereas the Welshpool & Llanfair Light Railway, included in the Cambrian Railways, did :

Table 4

<i>Line</i>	<i>Nature of land plan</i>	<i>Date</i>
Corris	Annotated bound OS 1:2500 sheets	post 1931
Welshpool & Llanfair	OS Corrected survey	1924
Vale of Rheidol	Annotated bound OS 1:2500 sheets	British Railways (Western Region) 1950
Van Rly	Rough traced GW 1:2500 plan	1945
Mawddwy Bch	Act of Incorporation roll plan	c1860

The Welshpool & Llanfair land plan contains a rare example of an insert at a scale of 40ft to one inch showing the complex title detail in the Severn Stars area of Welshpool (see figure 4).

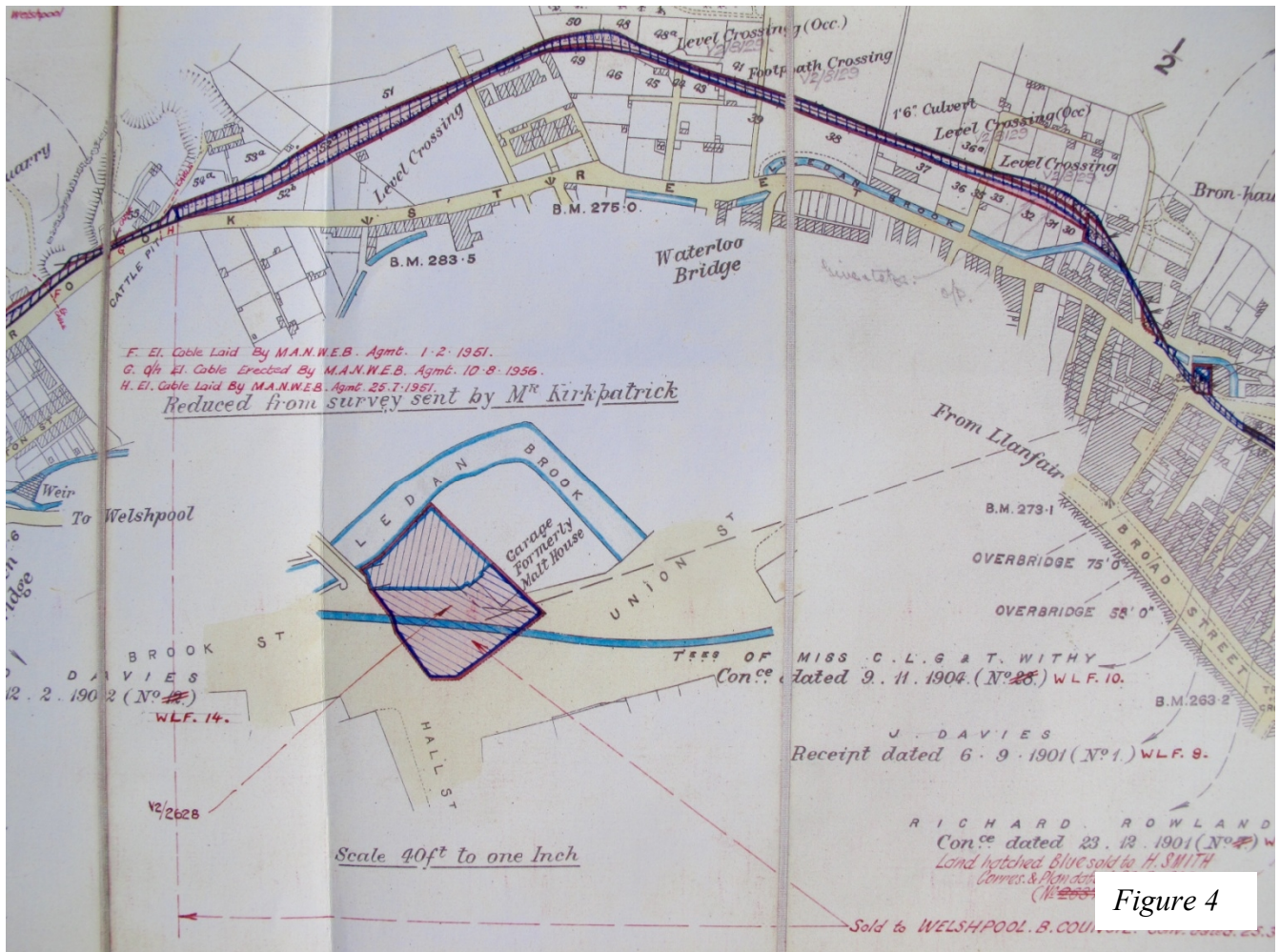


Figure 4

New lines or major works

A final category of land plans produced between the wars recorded new lines or major works, for example the widening of the main line between Swindon and Didcot. In these cases the scale was determined by two factors. Firstly, the scale of adjacent land plans. It made sense to maintain a degree of continuity and fit with adjacent plans. Secondly, the fact that in many cases there would not be a Ordnance Survey plan showing the new work to base a land plan on, so a bespoke survey of the completed work would be required.

Examples of this approach are:

- Swansea District Line between Briton Ferry and Pontardulais. The line opened in 1912-1913. After survey by GWR between 1922 and 1929, the land plan was published for use in 1931 at a scale of 2 chains to an inch.
- The survey at Uffington, Berks showing the results of widening work, on the Didcot to Swindon section was produced in 1934 at a 2 chain to an inch scale.
- Down in the far West the last section of the West Cornwall Railway line plan between Marazion and Penzance was re-surveyed, following completion of extensive works, in 1922 and produced at a scale of 2 chains to an inch.

- Lastly, the Westbury cut-off line in Wiltshire, opened in 1933, where the land plan survey of 1934 was produced at the 2 chain to an inch scale.

Looking at an example in detail

Machynlleth shows how the GWR prepared two new line plans, firstly on absorption of the Cambrian in 1922 and secondly on the acquisition of the Corris Railway in 1930.

The Ordnance Base plan is dated 1901 at a scale of 1:2500. The changes to the Base map recorded on the Ordnance Survey Corrected version for the GW of 1923 are:

Table 5

<i>Base map Second Edition 1901</i>	<i>OS Corrected amendments 1923</i>
SP	Sig.
-	WALL added.
SB	SIGNAL BOX - not specifically named
Crane	CRANE
-	75 MP (milepost) shown
-	ENGINE and GOODS SHED labelled
-	MACHYNLLETH STATION labelled
Cattle pens	CATTLE PENS
-	additional sheds on down (south) side between goods shed and station.
-	Corris Rly tracks shortened to Abercwmiddew wharf
-	New 1904 Corris Rly station building shown
-	New Corris carriage shed shown
-	Revised track layout on Corris Rly shown
-	Machynlleth Corris Railway station marked.
	RATGOED QUARRIES SLATE SHEDS marked
-	Deed and title information overlaid.
	parish and county names

An extract from this land plan is shown in figure 5.

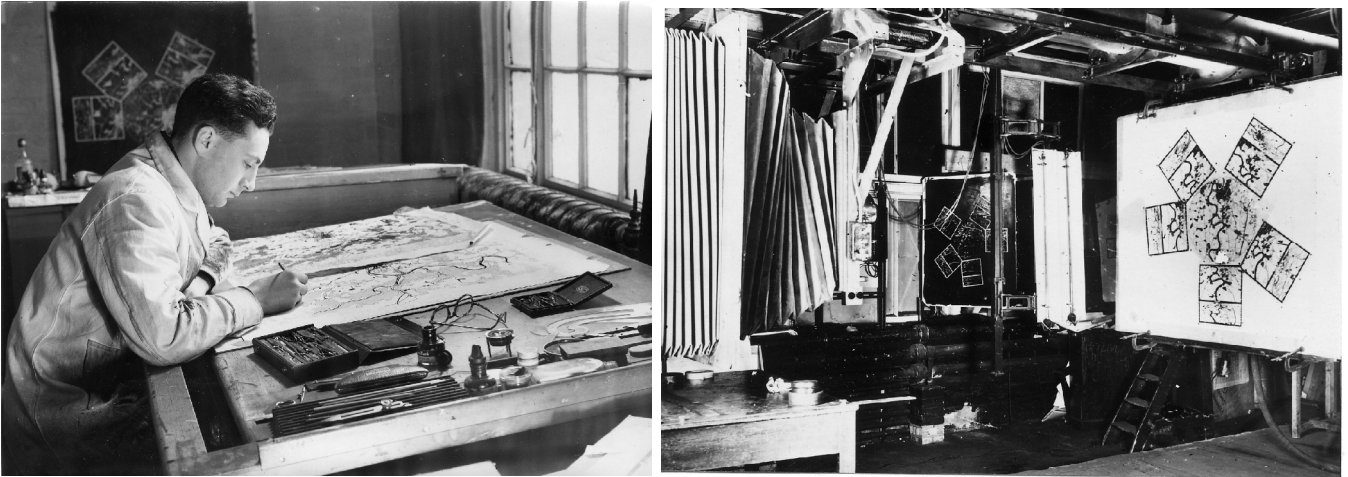
In 1930 on acquisition of the Corris Railway a decision was taken not to produce an Ordnance Survey Corrected land plan but to use annotated Ordnance

American target perspective maps of the second world war

Mike Nolan

The small-format final approach target maps used by Bomber Command for both day and, later, night bombing operations receive only a passing mention in *Maps and Survey*.¹ Many survive in collections and work is ongoing to produce a descriptive bibliography of those found.

In the meantime the following notes attempt to describe a later development, the large-format target perspective maps used by the 8th American Air Force during daylight raids. Research into these American target maps was prompted by a set of photographs of Ordnance Survey facilities and equipment taken during world war two kindly donated to the Defence Surveyors' Association by one of its members, Hugh Luxmoore-Peake. These photographs included two showing a cartographer working on an unusual map, and a similar map on a process-camera copy board.

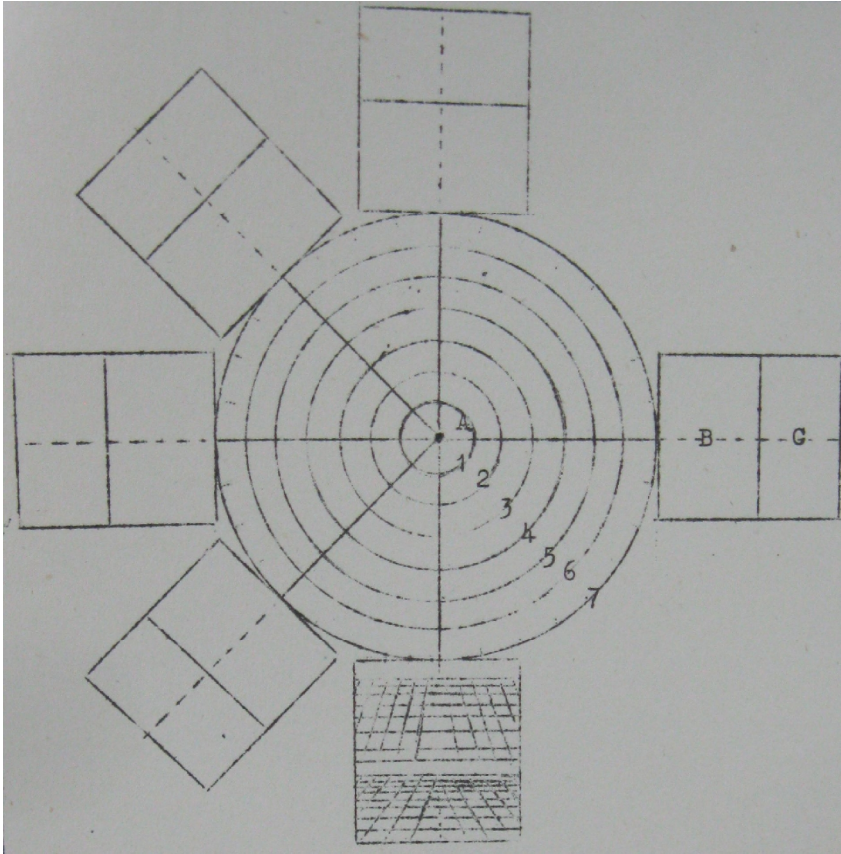


These images appeared to show a roughly circular central map surrounding by rectangular “spokes” each consisting of two oblique views of the central map as seen looking towards the centre along the bearing of the spoke. Only some years later was the mystery of these images resolved when consulting a file in The National Archives. In this file was recorded a meeting, an edited and slightly amended transcript of which follows:

“At a meeting at AD Maps, Eastcote on Monday 23 November 1942 attended by Lt Colonel Willis, Major Hart, Capt Hunter, Capt GK Geerling 8th AAF Bomber Command and Squadron Leader Verity A.I.3c(1), Capt Geerling explained that 8th American Air Force had been considering the preparation of additional target map material to assist navigators to identify targets when approaching on various bearings. Having visited all the 8th AAF Groups he had prepared sketches which had been fully discussed with navigators and bombardiers. At meetings at 8th AAF Bomber Command, Pinetrees, and 8th

¹ HMSO, 1952.

AAF HQ Bushy Park, it had been decided to embody the proposed additional oblique map illustrations in target material. He was tasked to take charge of this work and proceed with the preparation of the target material.



- A – Central Target Map, scale 1 inch = 1 mile; 7 mile radius; simplified daylight*
B – Perspective sketch for bombardier of target as seen from 7 miles away
C – Perspective sketch for navigator of target as seen from 15 miles away

A sketch (see left) was tabled showing proposed sheets measuring 36 by 36 inches, at the centre of which was an ordinary 1:63,360 scale target map of 7-mile radius from the centre of the target. Around this map were to be not less than five perspective sketches on different approach bearings showing oblique views of the target as seen from 7 and 15 miles. The number of sketches and the bearings chosen would be dependent on the terrain etc. To prepare these perspective sketches the latest available target material, revised from aerial cover, was required and the provision of this material was a main purpose of his visit. A team of draughtsmen was available at Kew and a printing press was being obtained. The 8th AAF would be pleased to

supply the results to the RAF if required. [The US Army's 660th Engineer Topographic Battalion was based at Bushy Park, Kew].

Lt Colonel Willis stated that he would assist in any way that he could. Map revision data was held either at AD Maps, Hillside, or at Ordnance Survey, Southampton. As a first step he suggested that Capt Geerling should visit Capt Quaife at Hillside with Sqn Ldr Verity to discuss the project and to see what was available there.

For coastal targets Capt Geerling raised the question of depiction of sea levels on maps at different states of the tide. Major Hart explained that Admiralty data had been used in the preparation of the 1:250,000 scale series, (GSGS 3982 etc.), and that all the data at Eastcote was available. It was suggested that a temporary attachment of some American draughtsmen to Eastcote might be beneficial.

On the matter of distribution of the material, it was suggested that a complete machinery was already in place at Eastcote for distribution of all target material to both the RAF and 8th AAF and that these new maps should be included in that system. On the matter of printing, Colonel Willis was anxious that 8th AAF should be made aware of the production facilities already available under GSGS and AD Maps. He agreed that, in view of the delay in installing equipment at Kew, he should be able to assist with the printing, once the task was scoped.

Capt Geerling stated that a report on the raids so far carried out by 8th AAF over enemy territory was being prepared for President Roosevelt. A sample copy of one of the proposed maps, the Lorient sheet, was to be included in the report and fair drawings of the three or four separate colour components for this map would be available by the 28 November. Colonel Willis agreed to print the map to enable the report to be sent to the USA on 2 December.

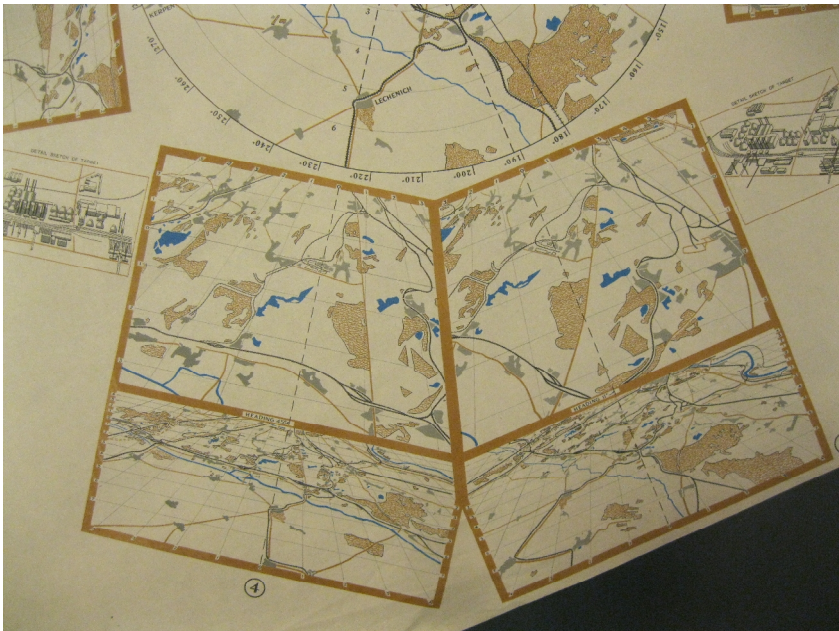
To ensure the new material related to existing material, it was agreed that the new target maps should include the existing Air Ministry target numbers.”

The example used as an illustration for this note is *Knapsack* an industrial complex south-west of Cologne. The sheet measures 81 cms by 81 cms (32 inches square). The central plan view is 32.5 cms, or 14 miles, in diameter around the circumference of which bearings are shown for every ten degrees. Seven one-mile radius circles are shown. Each spoke is 21 by 22 cms in size and for each, the bombardier's perspective view shows detail 3 miles before and after the target as seen from 7 miles before the target while the navigator's view shows detail 8 miles before and 4 miles beyond the target as seen from 15 miles before the target.

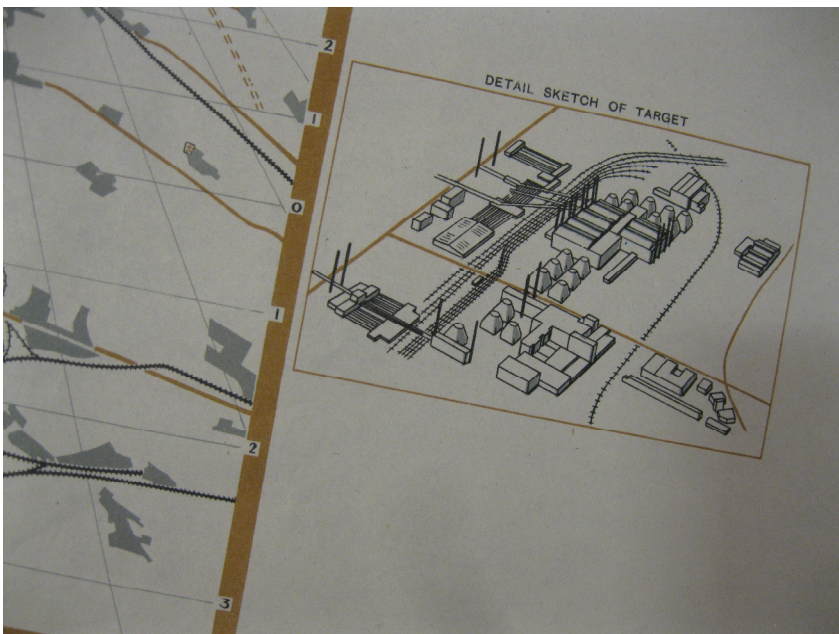
On all views, grey is used for the grid and built-up areas, black is used for railways and text, blue for drainage and brown for woods. Occasionally, as in the case of this *Knapsack* example, the perspective views are supplemented by a large-scale line sketch of the target.



*Target perspective map of
Knapsack target SW of Cologne*



An example of overlapping spokes



Additional line sketch of the target complex.



Circular central section showing colours specification clearly and bearings and one-mile radius distance circles

Knapsack was, in fact, the Goldenberg Power Station, Electrode Works, A.G. für Stickstoffedunger, Briguetting Plant. This complex had been studied, interpreted and drawn at the C.I.U. (Central Interpretation Unit), RAF Medmenham and a 1:5,000 scale plan, No. D/130, had been produced which showed 109 numbered and identified features of the complex. The plan, GSGS Misc. No. 172, was printed by 18 Map Reproduction Section R.E. in 1944.

In the British Library's Maps MOD TP (Target Perspective) collection there are 160 sheets comprising 131 targets in Germany, 20 in France, 3 in Belgium, 2 in Austria, 2 in Norway, 1 in Czechoslovakia and 1, a training sheet of Kings Lynn, in UK. The sheet of Lorient, in France, mentioned earlier, is not included in the British Library collection. Each sheet shows the Target Number and the production date, the earliest being January 1943 and the latest being April 1944. As is usual, the imprints are often later than the stated production dates, the latest imprint being April 1944.

Finally, what was the target the draughtsman was working on in the two photographs? From the extent of the large river meanders shown it is believed the target might have been Paris, or perhaps Rouen.

RAF target maps will form part of the agenda of Defence Surveyors' Association Map Forum at Bodley on 14 April.

Note also that DSA is holding its annual Maps & Surveys seminar on 2 July at Hermitage, Newbury.

Topics include:

- *The tanks at Flers 1916*
- *Corps Reconnaissance in world war one*
- *Operation Crossbow and the National collection of aerial photography*
- *Surveying the Falklands Islands and Dependencies*
- *Vietnam war – vagaries of mapping, gunnery, navigation and searchlights*
- *Advanced Geospatial Information and Intelligence Services research project*

For more information on both events contact Mile Nolan on 01635 253167 or maptnolan@gmail.com

***Asked and answered –
the naming of crags and early nineteenth century maps***

From Guy Richardson: I live in the Lake District and I'm curious as to why some crags in the fells have names on OS maps and others don't, even when they are prominent in the landscape. Guidance to OS surveyors in the nineteenth century seems to suggest that they should rely primarily on written sources, such as estate maps, valuation rolls, tithe maps etc and use local educated people to confirm names of places and features and their spellings. However, some crags are in such remote spots that it is hard to believe they would appear in written documents. It is possible that such remote features were given names by shepherds but such people were not considered reliable sources by the OS. Is there any research that links the naming of topographical features with written sources?

Richard Oliver replies: This is an interesting query, to which I don't think there is a straightforward answer. A difficulty with nineteenth century OS place-name recording in England is that most of the original Name Books in which the various forms of the names and the authorities therefor were recorded were lost in 1940. As it happens, the few exceptions include some such books for Cumberland and Westmorland, now in The National Archives, class OS 34. These should not be confused with the name books produced from the mid 1890s on, for the revised mapping, which are in TNA OS 35, and seem to be quite comprehensive. The original books for Cumberland and Westmorland might indicate the sort of people or written sources who were in practice vouching for names.

GR: Thanks for your comments, Richard. You're confirming what I've been told by the English Place-Name Society. It is a bit surprising that no one seems to have attempted research into the naming of topographic features on OS maps, although I can see it wouldn't be easy. I did have a look at a small sample of OS 34 files a few months back, but only found one reference to a document source; plenty of names of authorities which were interesting. Cumbria is fortunate that some Cumberland and Westmorland files have survived, but by chance (presumably) the majority of files are for areas outside the central Lake District which is the area I'm most interested in. Nevertheless there are files I didn't have time to look at so next time I'm in London I'll have a further go.

From Richard Tennant, Member of the British Commission for Military History: I am a military historian and I am working on a research paper about maps during the Peninsular War. On the OS I am interested in the first years up to 1815. I have found that in 1801, the first one-inch-to-the-mile (1:63,360 scale) map was published, detailing the county of Kent, with Essex following shortly after. The Kent map was published privately and stopped at the county border while the Essex maps were published by Ordnance Survey and ignore the county border. By 1810, one-inch maps of most of the south of England were completed, but were withdrawn from sale between 1811 and 1816 because of security fears.

However, between 1811 and 1816 there were no real fears of the country being invaded by France. I would be much more interested to see just which maps were available by mid-1805, before Napoleon's invasion plans were scuppered by Trafalgar. We might just have had some maps to fight back up to the Thames, but I suspect that there was not much available should the campaign have moved into 'middle England'. I

am therefore interested in a list of the dates and counties of the maps which were published after Kent and Essex, up until the end of 1815.

Richard Oliver replies: The whole question of OS map availability in your period of interest is discussed in Hellyer & Oliver, *The First Ordnance Survey Map*.¹ In summary, the position would seem to be as follows:

- 1795 : Gream's survey of Sussex, incorporating some OS material, published by Faden
- 1801 : Kent published by Faden, using Ordnance material throughout
- 1805 : Essex published by Ordnance
- 1809-10 : Eight sheets of Devon published by Ordnance (dated October 1809, possibly not on sale till February 1810)
- 1810-11 : Six sheets of Southern Hants, Isle of Wight and Dorset evidently completed, but possibly not released for sale.
- 1813 : Seven sheets of Cornwall and most of Sussex apparently completed, also not released for sale.

It is important to bear in mind that the 'publication' dates on the maps are often seriously misleading.

Although sales of the maps were banned in 1811 stocks of them were available for military use, and the military were supplied with some pre-publication copies on which the engraving of relief was incomplete: there are examples of the Essex and Devon maps in this state in Board of Ordnance records in The National Archives. Also available were the manuscript drawings at two-inches-to-one-mile, which supplied the raw material for the one-inch map: by 1815 these were complete for the whole of southern England, southern East Anglia, and the south Midlands, and southern Wales. There would have been some Ordnance mapping available for countering any invasion along the south coast, and along the east coast up to north of Great Yarmouth. Also available were the various county surveys produced from 1699 onwards as listed in Appendix 2 of *The Ordnance Survey in the nineteenth century*.² These county surveys were of variable standards: the Norfolk survey published by Faden in 1797 seems to have approached OS standards, whereas the Armstrong survey of Lincolnshire of 1779 was decidedly a 'Friday afternoon job'!

In summary, there was no lack of mapping available for military operations by 1805-15, although the non-Ordnance maps were of variable quality. What is not clear is whether there was very much actual use made of maps in home defence at this time, or indeed later in the nineteenth century: I am sceptical that there was much of a 'map-user culture' at this time. I am interested that you write that there was no real risk of invasion after 1805, as although this may be apparent with hindsight, nonetheless my understanding is that as late as 1813 the official view was that there was a real risk of invasion.

RT: Many thanks for this – it is most useful. Perhaps a couple of additional comments : There was understandably no 'map-user culture' in the UK at this time (or later into the nineteenth century) because the Horse Guards and the Board of Ordnance were not being called upon to defend the country subsequent to an invasion. Certainly in

¹ Roger Hellyer & Richard Oliver, *The First Ordnance Survey Map*, Charles Close Society, 2015.

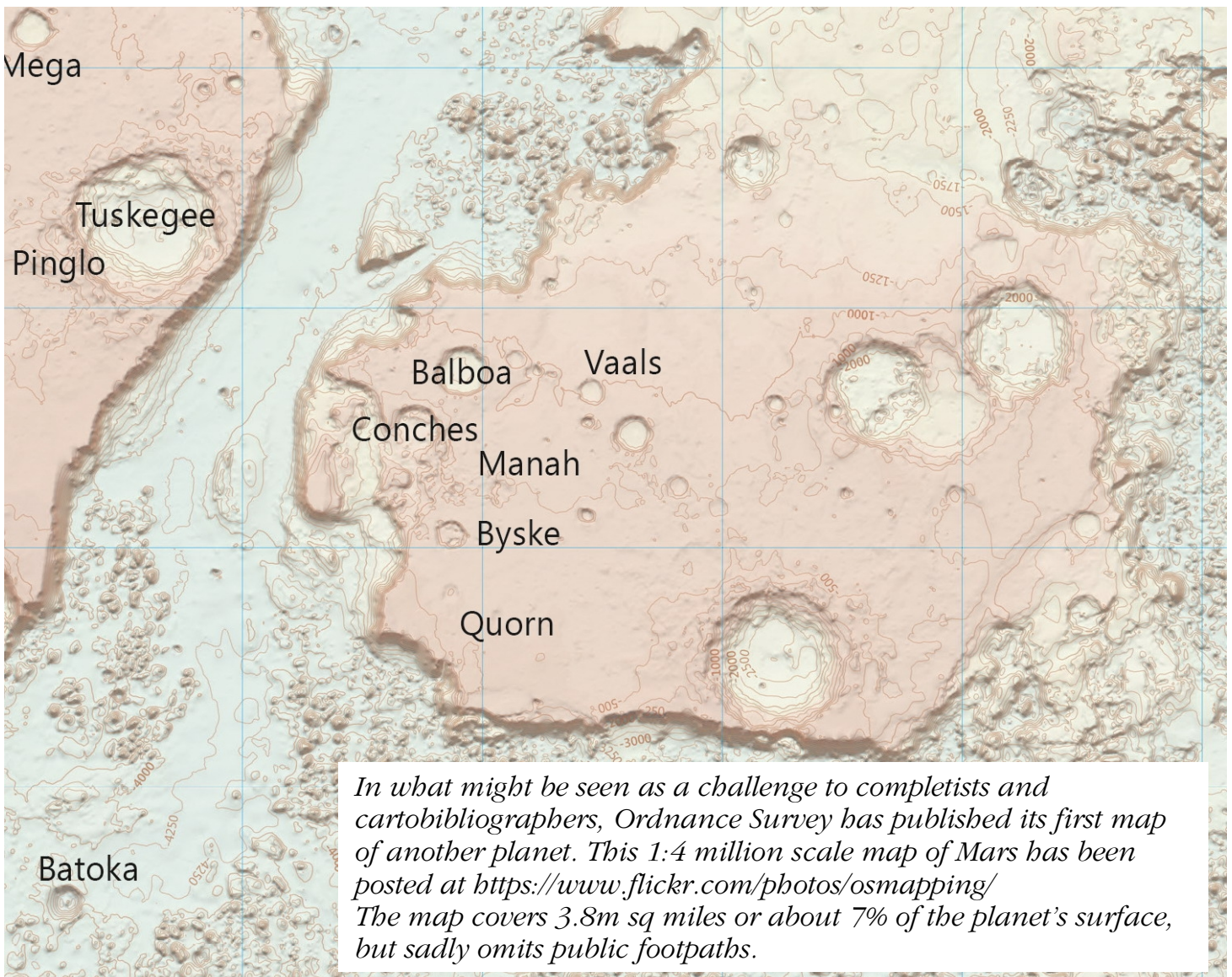
² Richard Oliver, *The Ordnance Survey in the nineteenth century*,: Charles Close Society, 2014.

Wellington's HQ's in the Peninsula and Flanders there was significant interest in the available maps. Once the Royal Navy had significantly destroyed the bulk of the French fleets in the years up to and including 1805, I would suggest that there could be no serious threat of invasion of the British mainland.

Of course, the likes of Jefferys, Faden, Stockdale and later, Wyld were simply publishers, rather than strictly 'cartographers'. However, in your researches, have you come across anything about Jasper Nantiat? The only trace that I could find is the Will of someone of this name from Tiverton, Devon who died in 1817. I suspect that he was active in collating and copying foreign maps – probably employed by Faden. His 1806 map of Russia and 1810 map of Spain & Portugal are quite spectacular for the time. It is interesting that the title of the 1810 specifically states : 'with the other details requisite for the intelligence of Military Operations'.

RO: Thank you for this. Faden was by no means an 'ordinary' map publisher, as he was 'Geographer to the King', which gave him a 'pull' on publishing any official mapping, both land and water. I'm afraid I don't know anything about Jasper Nantiat!

RT: I agree with Richard that Faden was no ordinary publisher. I suppose 'ordinary' would be the correct description of John Stockdale, referred to as the 'Bookselling Blacksmith'. By stating that Faden was not a 'cartographer', I was thinking about the Cassinis and Ferraris, both of whom were making surveyed, topographic maps and publishing them.



Kerry musings
David Archer

Popeye once had a map, or it might have been a chart, with **SECRET** in large black letters at the top. It showed only sea with a small island in the middle, and offshore, to the east of the island, again in bold black, a big **X**, with an arrow pointing to it and the word 'Treasure'. He and Olive Oyl set sail, with Bluto in pursuit, and when they sailed into the waters on the east of the island, there was the big black **X** floating on the sea as shown on the map. In my limited experience, this map, and that in *Treasure Island* are the only 'Secret' maps I would call exciting. Anything else has always been a disappointment.

On a map or a document, whether in bold red or black, the single word 'Secret' is pointless: it neither indicates who is allowed to see the item, nor who it is hoped will be kept in the dark, yet it alerts many who would have ignored it if their attention had not been drawn to it. Yes, I am aware there are all sorts of secret papers, some with distribution lists, some with a time embargo, some that will explode and destroy themselves if even a hint of garlic is breathed on them, but the fact still remains that many have only a single word intended to protect them against all evils. Giving the same sense of bewilderment are maps headed 'NOT TO BE PUBLISHED', with print codes showing thousands printed, or for the French speaking 'PUBLICATION INTERDITE' and 'NE DROIT PAS ETRE PUBLIÉ'. Where is the force behind such warnings? I repeat: pointless. They can only be classed with the lone three-worded sign in an alleyway in Newtown : Beware, protruding sign.

I have a jaundiced view of such map headings because secrets appear always to have been in favour with the military, civil service and governments, and when the time comes to share them under the thirty year rule or whatever, the secrets are so painfully silly and pointless that one weeps. And the same goes for maps headed 'Secret', which in my experience have always been rather dull. Or maybe I have not seen the good stuff kept on the top shelf behind the counter.

I can understand the desire to draw attention to a special map, but why 'Secret'? I can also understand why there is frequently no legend showing what the symbols mean. A two-step security measure I assume, whereby even if the map gets into the wrong hands, it might not be immediately obvious what one is looking at. Having the word 'Secret' hand-stamped is a higher level of security, since it does not alert those printing the map, with the stamp being applied once the maps are within the secure environment. However, this falls at the first hurdle as any map printer will spot out-of-the-ordinary items. Surely nobody would have a map headed 'Secret', with an explanation of what it is shown on the same sheet as Popeye had? For a secret map lacking a legend to be of use to those not in the know, more information is needed.

Consider two maps that I have beside me. The first is Sheet 33, Hull, in the one-inch Third Edition Large Sheet Series, with railways revised to October 1914. 'SECRET' is stamped in large red letters on the white Ordnance Survey front cover and in the lower margin of the map. The front cover has a purple elliptical stamp 'Officer in charge, Electric lights & ????'¹ Humber defences', with another stamp at the bottom 'Capt. C.B.R.E. O i/c E.L.&T. Humber Defences.'. The map has beautiful hand-drawn symbols and lettering rather than an overprint, showing ten pairs of symbols, one red the other

¹ Word stamped over dark royal crest, possibly 'telephones'.

orange, both within a blue ellipse, and each with a name written close by, Killingholme Marshes, Paull, Marfleet and so on. In Hull there are two further orange symbols. And that is it. So secret that we do not know how powerful the lights are, in which direction they shine and when they operate, assuming one of the symbols represents lights. But perhaps these are not the secret. The secret is that they exist at all, how many there are and where they are located. This secret can be seen at a glance by anyone with a small amount of wit, although the locals probably knew long before the map was drawn. Conclusion : a nice map but lacking an explanation of the symbols, not exciting.

The second map is far more interesting with an extensive legend on the back. France 1:25,000 43/18 SW Deauville has the top margin drenched in coloured inks : 'TOP SECRET until issued for briefing ground troops, thereafter SECRET; BIGOT copy no. 196, Information as at 19 May 44; STOP PRESS EDITION OF 20 MAY 1944; This map will NOT be carried in operational aircraft'. The map is thick with red and blue symbols around the coast and inland of Trouville. Turn over, and the legend is as full as one could imagine, with symbols for guns of all sizes, obstacles, minefields, signal installations, dumps and so on. In this case, 'TOP SECRET until issued for briefing ground troops', does give an indication of who will know of the secret, but why have 'thereafter SECRET'? No mobile phones in those days, so who might the ground troops have had a chance of gossiping to? As I say, to me, this is far more interesting, but still lacks the tingle factor, and I can assure you that under the right conditions, I tingle with the best of them.

Whereas a true secret involves an element of concealment, one could say that *anything one does not know about* is a secret. And here, when considering maps, things get much more interesting, exciting, tingling even. Someone new to collecting Ordnance Survey maps, who has not had time to read all that has been written in the past thirty years, will soon experience the tingle feeling. Many begin by noticing that some pre-1940 maps have an ER cypher on the front cover and get excited (as I did), thinking they must be scarce, until they study *Map cover art* and see they are not too unusual. They might then notice that two styles of map lurk within the standard covers of the Snowdon District, the standard and relief editions. On a similar theme, finding the early Ellis Martin hand drawn covers on the New Populars, or seeing their first quarter-inch map in a long red sky cover, location labels stuck on Populars, or finding their first benderfold Popular, all these were exciting to many of us when we first came across them. We wondered whether what had been spotted was significant or not, and whether other members had noticed the same. Today, a little research reveals many such things as recorded, but the observant collector is on the right track for making their own discovery. Indeed, they might then spot something not mentioned in the literature, but unknown to them, it *is* known to a small group of members. This is a problem that I have mentioned before. How do we get such information into general circulation?

Roger Hellyer has found such things hundreds of times, putting each detail into his cartobibliographies and sharing the information. Other authors of society monographs or articles in *Sheetlines* have also shared their discoveries, with Rob Wheeler being quite consistent in working observations into short pieces. Such pieces are what the Rowley Award hopes to encourage. But so many of the interesting discoveries by members are isolated nuggets, described concisely in a couple of sentences, not enough for a short piece in *Sheetlines*. So, how might these observations be harnessed for the benefit of all?

Here, I am again returning to the suggestion that we should try to recreate the job

files for all OS maps. We have cartobibliographies for many series of maps, but need similar in-depth work on map detail and covers; both a much harder and easier task. For covers, easier in that fewer elements are to be studied and recorded. Harder in that extensive public holdings of map covers are few, and private holdings are not publicised. Gathering minute details of map covers would certainly be challenging. But it can be done as Keith Andrews and collaborators have shown with post-war one-inch maps. Hold on, someone says, the society archives hold the job files for the Seventh Series, so why was this work needed? Because it gives an overview of what was happening to the whole series, whereas the job files record details sheet by sheet with no attempt to pull everything together. And anyway, it would be fun to try and re-build them, a bit like creating a dinosaur from fossilised DNA.

The search facilities on computers are now extremely powerful and could be used with advantage. Even if we did not set up a file for each series, we could consider a single file which housed *any* small comment notified by members, as long as each entry states the series and sheet number referred to. Searches would show what has been reported for the *Civil Air Edition*, *Country round Aldershot* or *Dublin District*. Results might be an observation on the covers of sheet 9, another on sheet 11 and a longer piece for the whole edition, which could all then be pulled together. Small, seemingly insignificant details when combined can be quite important, but first we have to gather them, and at once hit a brick wall : most collectors are reluctant to share information as it alerts others who might start competing, and helps those already competing. I do not see this as selfish and do not mind as long as information is recorded for the future. Again, I am labouring an old theme, which I believe is important. Several times I have looked through specialist collections unable to spot the significance of many items. Unless the owner had written notes, published or unpublished, such information will be lost when they pass on. Before the book was published, I remember Roger putting two copies of the Loweswater cover (*Map cover art 97*) in front of me and asking what the difference was. After a few minutes I gave up, and was shown that one had two and the other four sheep. How many members have spotted this for themselves? And have you mentioned it to anyone?

I like to believe that I am not competitive, meaning I should be willing to share information on my collecting interests. But I don't, not wanting to draw further attention to them. Instead, I have detailed notes which will either be shared sometime or passed to the society archives if time runs out. A disadvantage of not coming out with our collecting interests, is that if they knew, others would sometimes offer information or maps they no longer want. Sometimes. But we do need to gather members' observations. Somehow.

Olive Oyl wanted Popeye's birthday cake to be a secret, so she enrolled his nephews Pipeye, Peepeye, Poopeye and Pupeye to keep him out of the house whilst she finished the icing. She poured white and then black mixtures into the icing bag, and when she squeezed and piped the icing onto the cake, it formed a smooth black and white chequered design like a draughts board. How she did that is her secret and has nothing to do with maps. I just thought you might be interested.

If there is an enthusiastic response to David's suggestion we will investigate setting up an interactive 'wikipedia' on the CCS website for members to share their findings [Ed].

Letters

I chanced to come across the article (*Sheetlines* 89, 3) about John Beer and his map of Salalah. I was serving at RAF Salalah at the same time as John. He was a very friendly man and I did miss his presence when he finished his tour. I occasionally assisted him with his surveys. He used a plane table and compass and a lot of walking! He later gifted me a copy of his map but unfortunately it has vanished from my book collection. I will check with my family members just in case it has found its way into a box of memorabilia. The RAF Masirah & RAF Salalah Veterans Association, which was established fairly recently, may have members who remember John and might be worth contacting on their web site.

Derek Christie

Cagoules, Beer and Free Maps¹ set my thoughts racing. Greater commercial freedom for the OS could offer new opportunities for CCS. To achieve this, we simply need to look on the forthcoming 'OS Collection' as itself being collectable. That way, as the output of paper maps from OS declines, the place which they occupy in the life of researchers can gradually be taken over by raincoats, fleece tops and rucksacks. The Society has a golden opportunity here to get in on the ground floor and record, as they reach the market, variations in size, colour, material, logos, stitching, weight, zips and other salient factors. If, of course, OS are forward-thinking enough to reproduce images of their own products on the items in question, a whole new field opens up. What could match the intrinsic attraction of a rare New Popular sheet on the back of a ladies' medium-size green cagoule? And just think of the rarity value in fifty years' time - particularly if an occasional image is (accidentally?) placed upside down. Perhaps, in preparation for the happy day when the new Craghoppers collection emerges, David Archer (*Sheetlines* 104, 59) might like to give some thought to the most suitable means of storing the various items? Plan chests somehow don't seem to fill the bill.

Graham Bird

I was interested in Thomas O'Loughlin's article on Auto-mapic.² I made some searches on British Newspaper Archive. It was on sale earlier than the 1960s indicated in the article. The Sunderland Echo for 9 December 1954 (page 10) has an advertisement for 'Your Christmas Gifts' from Binns. One item is "The Auto-mapic. Ideal for motorists. Automatically shows any part of country. 45/-". I then found an entry on University of Portsmouth Geography Dept Hantsmap website at <http://www.geog.port.ac.uk/webmap/hantscat/html/t000414.htm> showing "Road maps, plastic and paper Auto-Mapic gadget, Road Map of Great Britain, made in Austria, about 1954."

David Hawgood

¹ *Sheetlines* 104, 50

² *Sheetlines* 104, 30

— “ Auto-Mapic ” Road Map of Great Britain.
 [London, Odhams Press, 1961.] **Maps 197. h. 3.**
 1 : 800,000. 160 × 245 mm.
 Made and printed in Austria. The maps are enclosed in a
 plastic case, giving automatic fingertip control to 20 sections.

Readers may be interested to see the above extract from *The British Museum Catalogue of Printed Maps, Charts and Plans, photolithographic edition to 1964, volume 6, FO-GRE*, published 1967, which refers to the subject of Thomas O’Loughlin’s article in *Sheetlines* 104.

David Archer’s article about John Dennett’s papers (*Sheetlines* 79, 8) didn’t mention this publication: ‘Cartographic production control’, JRB Dennett, LHE Hobbs and BF White, *The Cartographic Journal*, 4.2, December 1967, 96-103.

Richard Porter

Book reviews

Glimpses of Ireland’s past; The Ordnance Survey memoir drawings; topography and technique, Angelique Day, Dublin: Royal Irish Academy, €30.

The drawings associated with the Ordnance Survey Memoirs, the narrative accounts of parishes accompanying the first six-inch scale Ordnance Survey maps of Ireland, are presented here as a special study. They provide an important dimension to the ‘portrait’ of the land provided by the different records of the Survey, and deserve to be better known and used. They depict sites and objects in parishes of the northern half of Ireland because the memoir scheme in the Ordnance Survey was an uncompleted plan to describe the parishes in words, statistics and topographical drawings alongside the maps.

Apart from the drawings with accompanying notes there is a helpful introductory history of the mapping of Ireland. It also includes a useful selection of Biographies and Bibliographies.

Angelique Day and Patrick McWilliams are editors of the *Ordnance Survey Memoirs of Ireland* 40-volume series, published by Queens University Belfast 1990-98. For more information visit www.ria.ie

Rodney O’Leary

British town maps: a history, Roger JP Kain & Richard R Oliver, London: British Library, 2015, £30.00.

This book provides an introduction and narrative history to the authors’ major new online resource - the *Catalogue of British town maps* (CBTM). This is available online at: <http://townmaps.data.history.ac.uk>, hosted by the Institute for Historical Research, University of London. The *Catalogue* contains cartobibliographic data and descriptions of 7163 town maps in England, Wales and Scotland, along with index maps for each one indicating their geographic

coverage. The maps date in time from the earliest known for each town through to 1900 - by this time it is assumed Ordnance Survey large-scale town plans had become the main base for mapping by public and private institutions.

This book and *Catalogue* signal the completion of a major research project (dating between 1985-2014), examining the large-scale mapping of England, Wales and Scotland. Work on tithe maps (1987-1991), published as *The Tithe Maps of England and Wales* (1995, reprinted 2010) and on enclosure and related maps (1993-1997), published as *The Enclosure Maps of England and Wales 1595-1918* (2004, reprinted 2010) has contributed directly into this particular project, as urban areas mapped for these purposes are included here in the CBTM.

The value of the *Catalogue* is enhanced with a summary of its purposes and limits. As town maps are widely dispersed across libraries and archives, the main purpose of the *Catalogue* is as a location tool for the researcher - to locate, catalogue and describe cartographic characteristics, topographic content and bibliographic data for each extant town map as a publicly available resource. It is thus primarily intended for historians to find maps, rather than for cartobibliographers interested in the more detailed differentiation of particular printing states or editions. The *Catalogue* is based on libraries' own finding aids, which are rarely complete, and there are likely to be omissions, especially of maps published within written texts, ephemeral publications, and unpublished manuscripts.

The definition of a town is inclusive, based on Alan Everitt's list of markets active in the sixteenth and early seventeenth centuries, Samuel Lewis' topographical dictionaries from the 1830s, and Ordnance Survey mapping. The minimum scale of map for inclusion in the *Catalogue* was reasonably decided as 2½ inches to one mile (1:25,344), as it was considered about the smallest scale that could practically name streets, and therefore also record urban features in a thematic manner. The maps at this scale or larger have been included if they cover the main built-up area of the town, or an identifiable district, township, or ward. However, it excludes deposited plans for canals, railways and other proposals requiring Parliamentary approval, as well as projected engineering works and urban redevelopment that focuses on a particular area rather than the whole town. Even with these limitations, the numbers of maps for some of the larger towns is impressive: more than 400 of London, even excluding individual London suburbs, 108 for Edinburgh, 92 for Oxford, 81 for Manchester, 75 for Glasgow and Cambridge and 60 for Birmingham.

The main text of the book, spanning 256 pages, is arranged in 20 thematic chapters, with a final summary index of the towns in the *Catalogue*, their number of maps, and date span. As we would expect, the text is very clear and readable, written with a confident authority reflecting the authors' unrivalled expertise in mapping. The value of maps in both representing the real world as well as for their cultural and symbolic meanings is clearly explained. In addition to detailed chapters on different types of mapping, and their multiple and changing purposes over time, there is also a useful chapter on printing technologies, and another on survival and losses. The work is beautifully illustrated with 166 colour

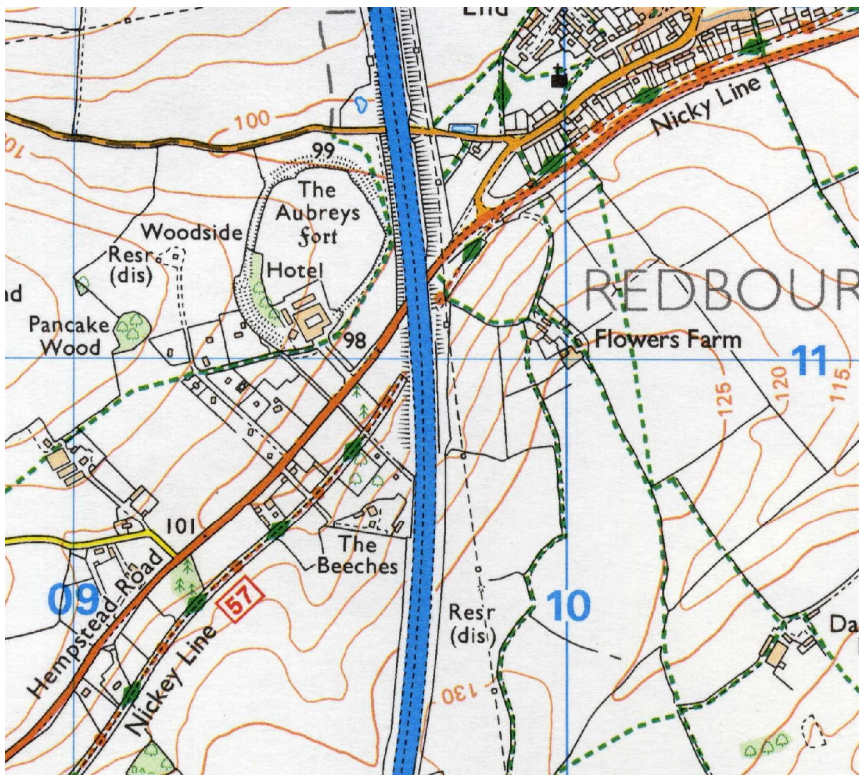
illustrations, many of them clear, and is particularly strong in British Library collections. There are also 125 informative endnotes, giving some pointers to further reading.

There is little doubt that this *Catalogue* represents a monumental achievement which will be of lasting value. Town maps are relevant as sources to a very large number of historians whose research in some way connects with the urban past. When we add to this number the many more specialist researchers and those interested in local history, as well as the requirements to study towns in secondary schools, as well as in higher and further education, it is obvious the *Catalogue* will have an enormous user community.

Whilst it is difficult to sing praises for this book quite as wholeheartedly, it works well as an attractive and accessible introduction to urban maps. Some may perhaps wish for a smaller font, allowing scope for more written content or larger illustrations. The data collected within the *Catalogue* too would allow for some impressive quantitative analyses and new findings, which are not included here. Nevertheless, map-lovers and historians will find it an enjoyable read with good illustrations, and a useful physical reminder of the completion of this significant and useful electronic finding aid.

Chris Fleet

Taking the Nickey



The Nickey Line is a popular walking and cycling route along the track of the disused Hemel Hempstead to Harpenden railway line.

According to www.nickeyline.org the name may derive from 'funicular' (there being steep gradients) or possibly the knickerbockers worn by the navvies who built the line, or more prosaically, from the parish of St Nicholas in Harpenden. Whatever the truth, Ordnance Survey are evidently in two minds

about the spelling, as revealed by both Nicky and Nickey on this extract from *Explorer* 182 in the vicinity of TL 100110.