

Sheetlines

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

Number 106

August 2016



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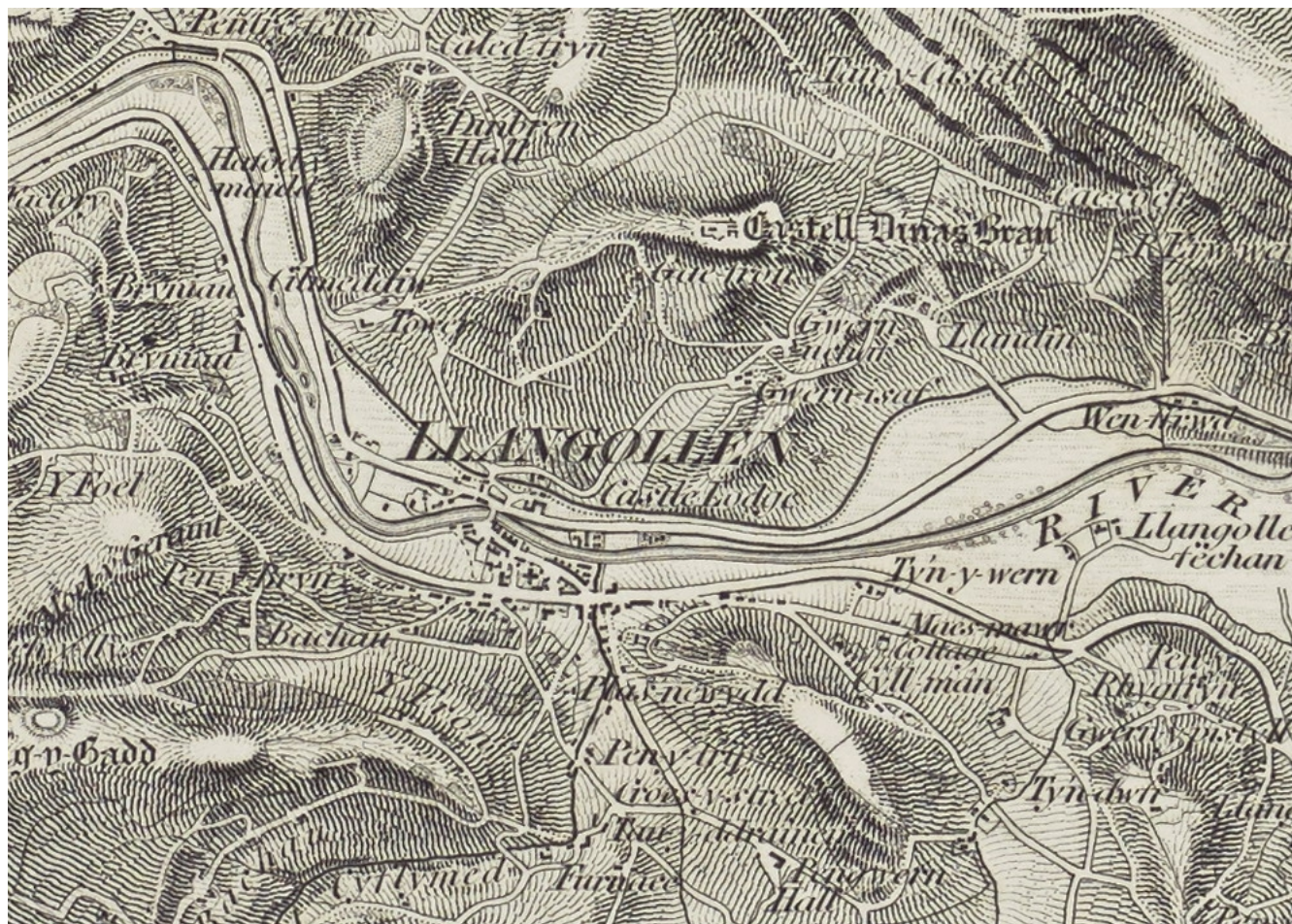
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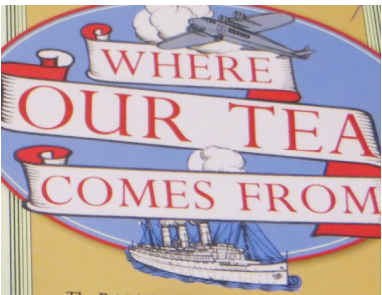
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The collection of scans of sheets 1 to 90 of Old Series one-inch maps acquired from National Library of New Zealand (as mentioned in *Sheetlines* 102) is now being uploaded to our website and will soon be available for viewing online. Details will appear on the news page at www.CharlesCloseSociety.org/latest. The above typical extract is from sheet 74NE of 1838. Also now on the website is the 'virtual museum', a collection of images and documentation describing details of map production in the pre-digital era. This is very much a work-in-progress and anyone who is able to contribute material is urged to contact the editors.

On Saturday 8 October at 11.30 at the Vine Pub, Kentish Town, John Peaty will talk about development of British military mapping in the Great War, covering the role of Charles Close and the Ordnance Survey and touching on controversial episodes like the Gallipoli mapping. On 22 September, as previously announced, the Society will visit Dennis Maps at Frome, Somerset, the printers of OS and Irish maps. Booking is essential for both events; please contact Bernard Anderson (details opposite) or email Visits@CharlesCloseSociety.org.

About one hundred members travelled to Llangollen in May for the 2016 AGM, which was held in the Eisteddfod pavilion. Caroline Walker talked about the work of her great-uncle, the artist, typographer and cartographer MacDonald Gill and local CCS member Bill Saunders talked about the wartime activities of Military Survey at nearby Wynnstay Hall (see page 21). The membership secretary reported that the Society membership now stands at 686, the highest number ever. Next year's AGM will be in Lincoln on Saturday 13 May 2017.



Scenes from the map market at Llangollen including Caroline Walker (above right) showing items designed by MacDonald Gill, such as the map cover, above.



Rowley and O'Brien awards 2016

The Rowley Award is presented for an article published in *Sheetlines* by a new author or someone with one previous publication. The 2016 award was presented at the AGM in his absence to Gavin Johns for his article 'The use by the Great Western Railway of Ordnance Survey maps in preparing land plans', which appeared in *Sheetlines* 105. The judges felt that Gavin had introduced a new group of Ordnance Survey related maps to *Sheetlines* and the membership in general. The article was well researched, interesting, OS related, and might well encourage others to write about other groups of Ordnance Survey or OS-related maps which have been neglected by the society.

The next Rowley Award will be presented at the 2018 AGM for an article in *Sheetlines* 106-111, again by a new author or someone with only one previous publication. So, if that means you and Gavin's piece inspires you, get writing and you may be the next winner.

Also awarded at the AGM was the first presentation of the newly-created O'Brien Award. The purpose of this award is to recognise work which has significantly improved the understanding of the Ordnance Surveys though the study of fields in which Ian O'Brien took a particular interest. These are maps of Great Britain and its counties prior to the completion of the Ordnance Survey; Admiralty surveying and charting; and foreign topographic maps.

The first O'Brien Award was presented to David L Walker for his work on the triangulation of Scotland and its links with Admiralty surveys, the fruits of which have appeared in articles in *Sheetlines* 98, 99, 100, 101 and 104.



David L Walker (left) being congratulated by Chairman Gerry Zierler on presentation of the first O'Brien Award, May 2016

Ordnance Survey on the rails

Richard Dean

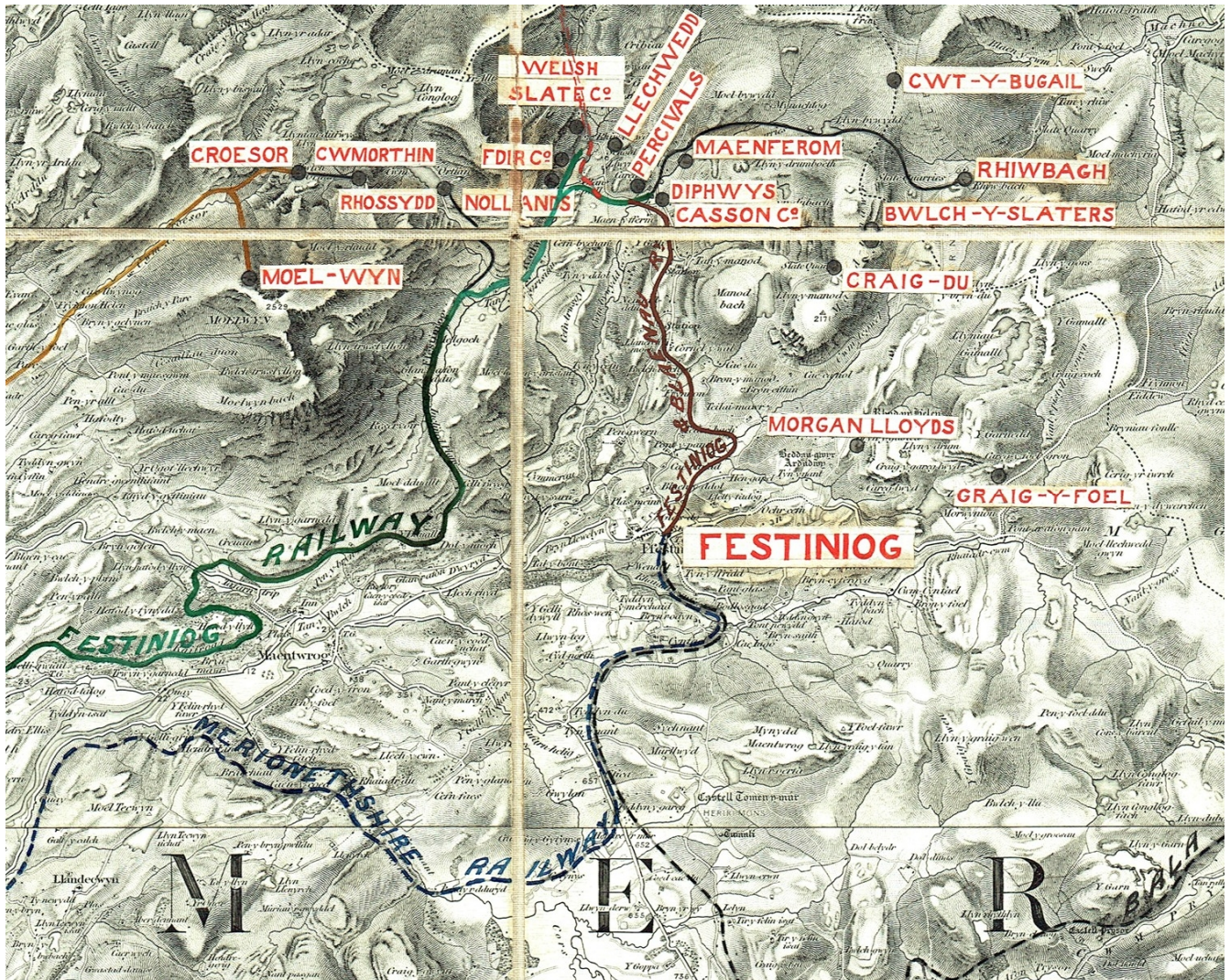


Figure 1. Part of an Old Series one-inch map c1874 covering the proposed Bala & Festiniog Railway, marking the positions of the principal slate quarries

From the numerous surviving examples it is clear that railway companies were good customers for Ordnance Survey sheets. Gavin Johns¹ has drawn attention to the use of OS plans in the preparation of detailed railway line plans, which touches on the bigger topic of how OS data has been used over the years and the benefits that it has brought. This is a field which seems to have been little researched, but it is worth considering the railway connection in a little more detail.

Small scale OS maps were extensively used by railway companies for a multitude of commercial and legal purposes, one-inch engraved sheets often being inked up by hand with routes, stations and so on.

By a parliamentary standing order of 1846 an index map showing the location

¹ *Sheetlines* 105, 44-53.

and route of proposed railways had to be deposited with the detailed plans and sections. The one-inch OS map was used where available, and a typical example is shown in figure 2.

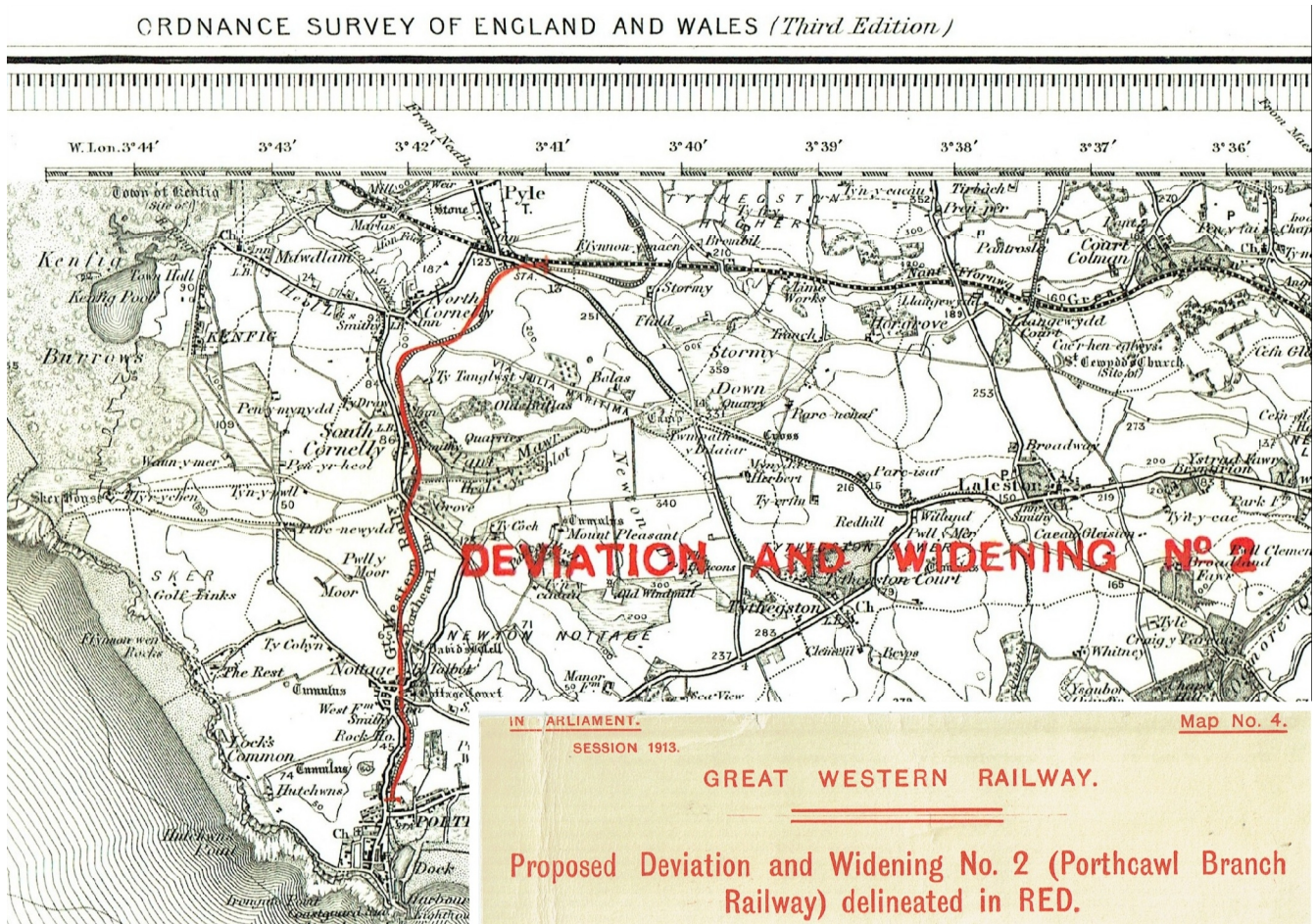


Figure 2. Part of one-inch engraved sheet 262 used as an index map by the GWR

Railway companies were jealous guardians of their territories, and kept a watchful eye on schemes promoted by neighbouring lines and undertakings. Parliamentary deposits were carefully scanned each session, and typically proposed routes would be transferred to sets of OS sheets for careful assessment as to whether petitions should be lodged opposing the scheme outright, or seeking protective provisions in the promoter's Bill (see figure 3).

Designing a route for new railways needed an accurate field plan which was usually produced from an expensive ad hoc survey.² Surprisingly, the potential benefit of large-scale OS mapping for this purpose does not seem to have played a large part during the 'Battle of the Scales' 1851-1859, perhaps because it was a quiet period for railway promoters, but as Richard Oliver has commented, 'They used it when it was available'³ (see figure 4).

² Gordon Biddle, *The Railway Surveyors*, Ian Allan Ltd & BR Property Board, 1990, chapter 3.

³ Richard Oliver, *The Ordnance Survey in the nineteenth century*, Charles Close Society, 2014, 485.

Any infrastructure works by, or affecting, the line needed plans, and OS sheets were bought and used in large numbers, particularly where property outside of the railway boundary was involved (see figure 5).



Figure 3. Central London extract from six-inch OS mapping of 1895 used by the London & North Western Railway to record proposed schemes. The sheets were joined and cloth backed in three large sections covering the whole of the London area

Figure 5. OS plan used to show alterations to footpath routes affecting the GWR at Westbury, Wiltshire

The land plans referred to by Gavin Johns prepared by the GWR and other companies were usually constructed from bespoke surveys, although sometimes an earlier plan would be recycled.⁴ Most of the larger companies distributed printed and bound copies to many of their departments such as those of the Secretary, Engineer, General Manager, and Solicitor. Here they became valuable administrative tools with a purpose beyond land management, and were frequently called 'line plans'.

Many such plans were surveyed, drawn and printed by outside contractors and it is difficult to establish the extent to which they incorporated OS data. When the writer worked in the BR Liverpool District Estate Office in the 1960s there was a perception that the railway's own surveys were more accurate than OS sheets, particularly in respect of permanent way. An experienced chainman explained to me that the width of railways between the lineside fences on OS plans was unreliable as they were commonly used to absorb any plotting errors; this may have been an exaggeration, and OS plans gradually came into more frequent use. The Lancashire & Yorkshire Railway decided to standardise their motley collection of existing land plans around 1900 with the data transferred to cloth-backed 1:2500 sheets which gave good service in the country but were less successful in busy urban areas (see figure 6).

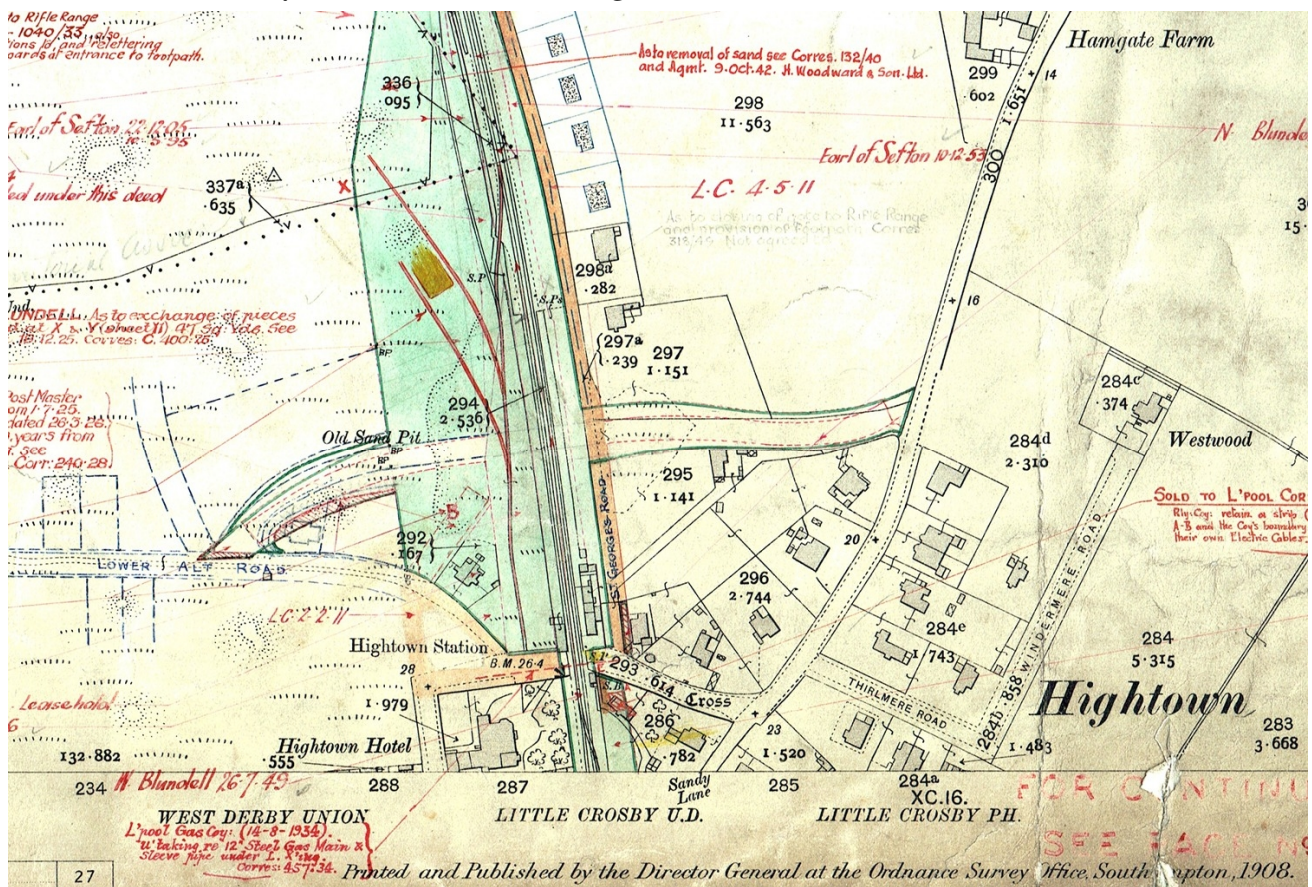


Figure 6. Part of Lancashire & Yorkshire Railway land plan using OS 1:2500 sheets

⁴ In Anglesey the c1905 LNWR contract plan for building the Red Wharf Bay Branch served as a land plan throughout the undistinguished life of the line.

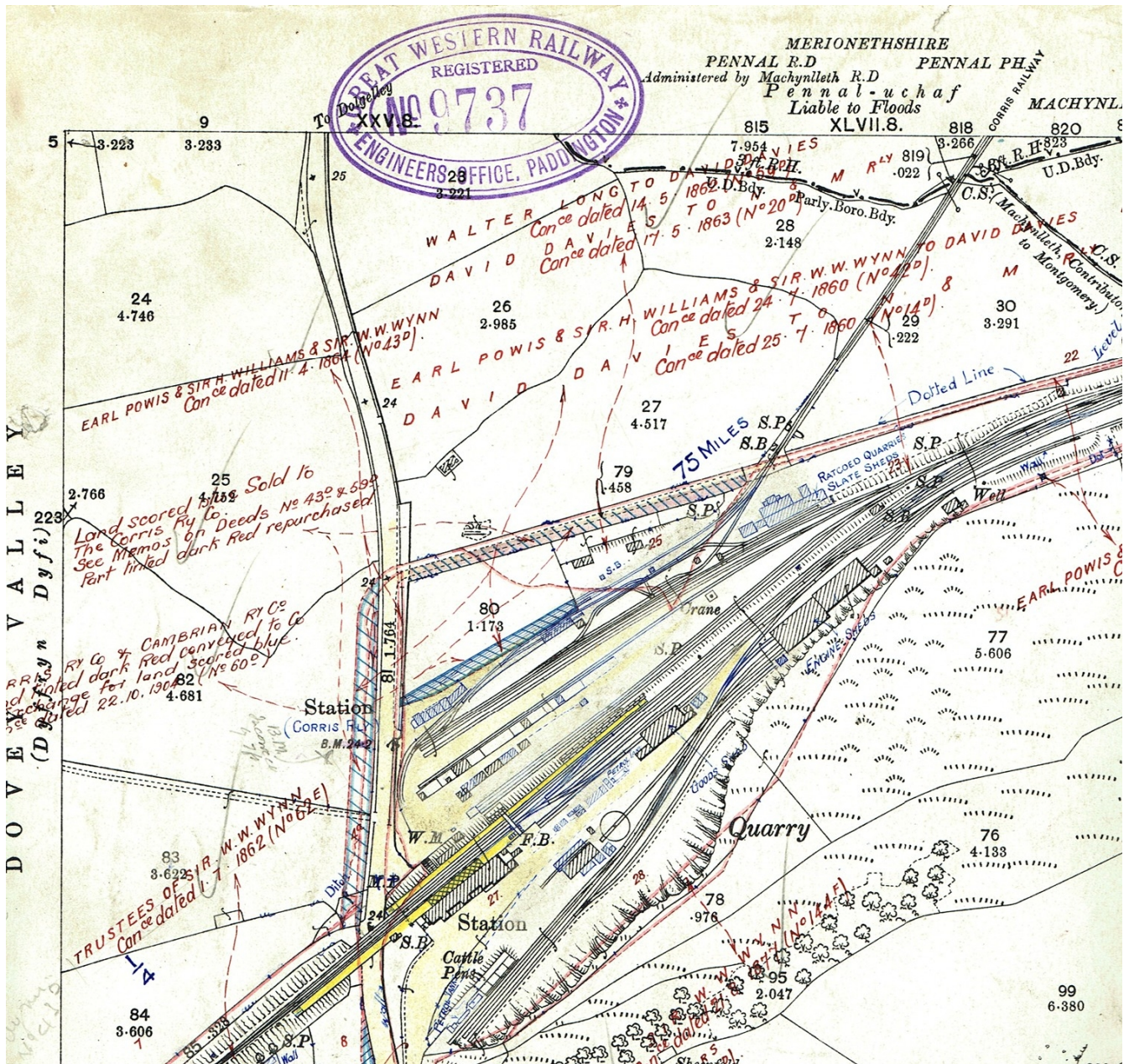


Figure 7. GWR 'stage one' land plan using marked-up OS sheet (compare with the extract of the later printed plan on page 53 of Sheetlines 105)

The Great Western method of ground survey and production of two-chain⁵ scale plans could not react quickly enough to the demands of hundreds of miles of absorbed lines resulting from the 1923 grouping, so they adopted a similar practice to the Lancashire & Yorkshire of using OS sheets as land plans for these lines, this being an economic and rapid expedient. As a first stage they quickly collated all the available groundwork, title, and boundary information manually on to a set of original OS sheets which then formed an immediate working record. To supply multiple copies this way for use by various departments was uneconomic, so they later went a step further and used the data for the

⁵ Two chains (132 feet) to the inch, 1:1584, was always a favoured scale for general railway work.

production of standard lithographed plans at the OS scale as detailed by Gavin Johns, the printing and binding work being contracted out.

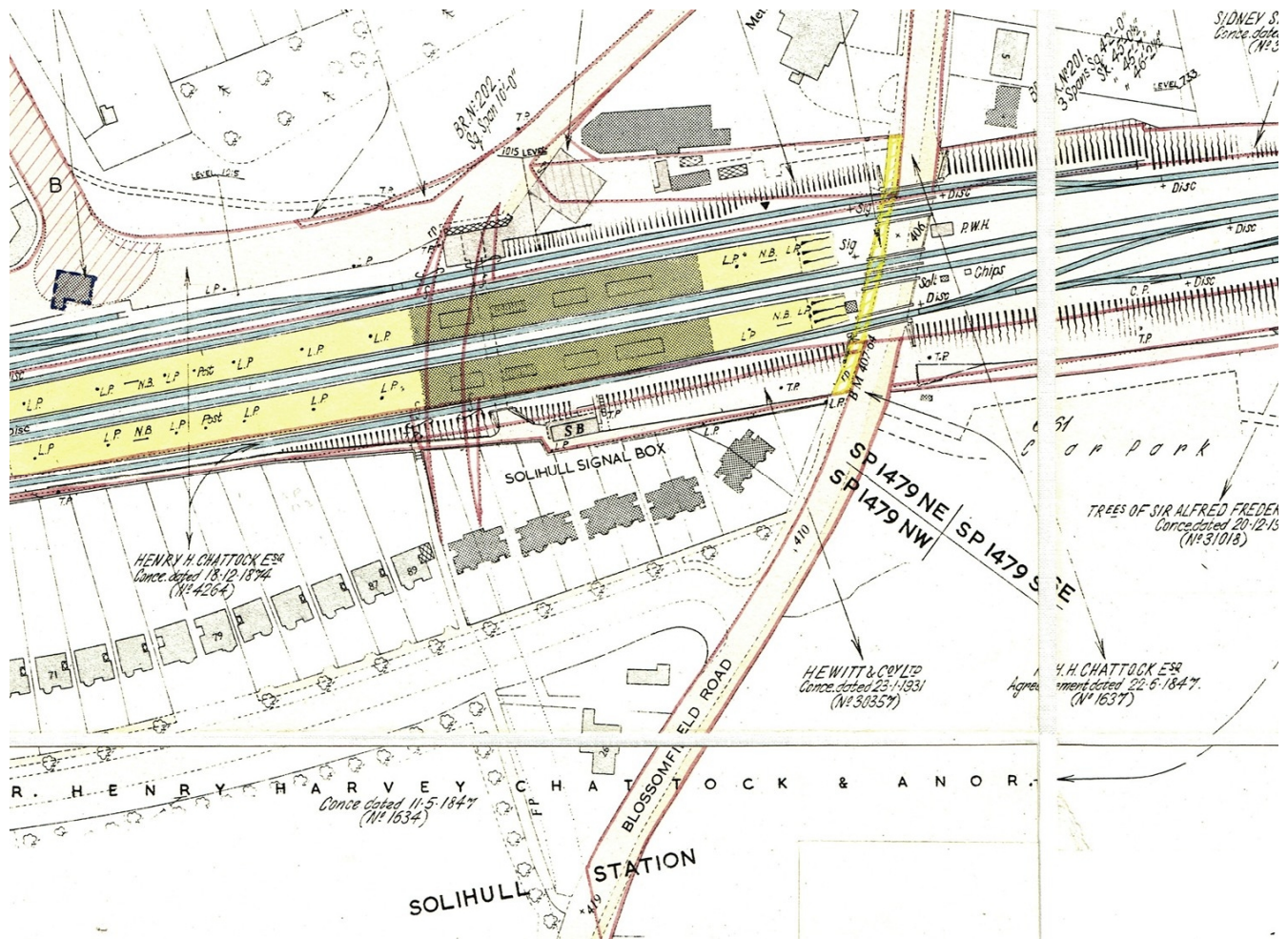


Figure 8. Part of 1:1250 scale Western Region line plan of 1961. Note the sheet intersection marks for the OS plans used to compile it. Detail altered or added by BR shows up more darkly. This copy was for the use of the District Engineer, and omits the traditional colour-washing of railway property.

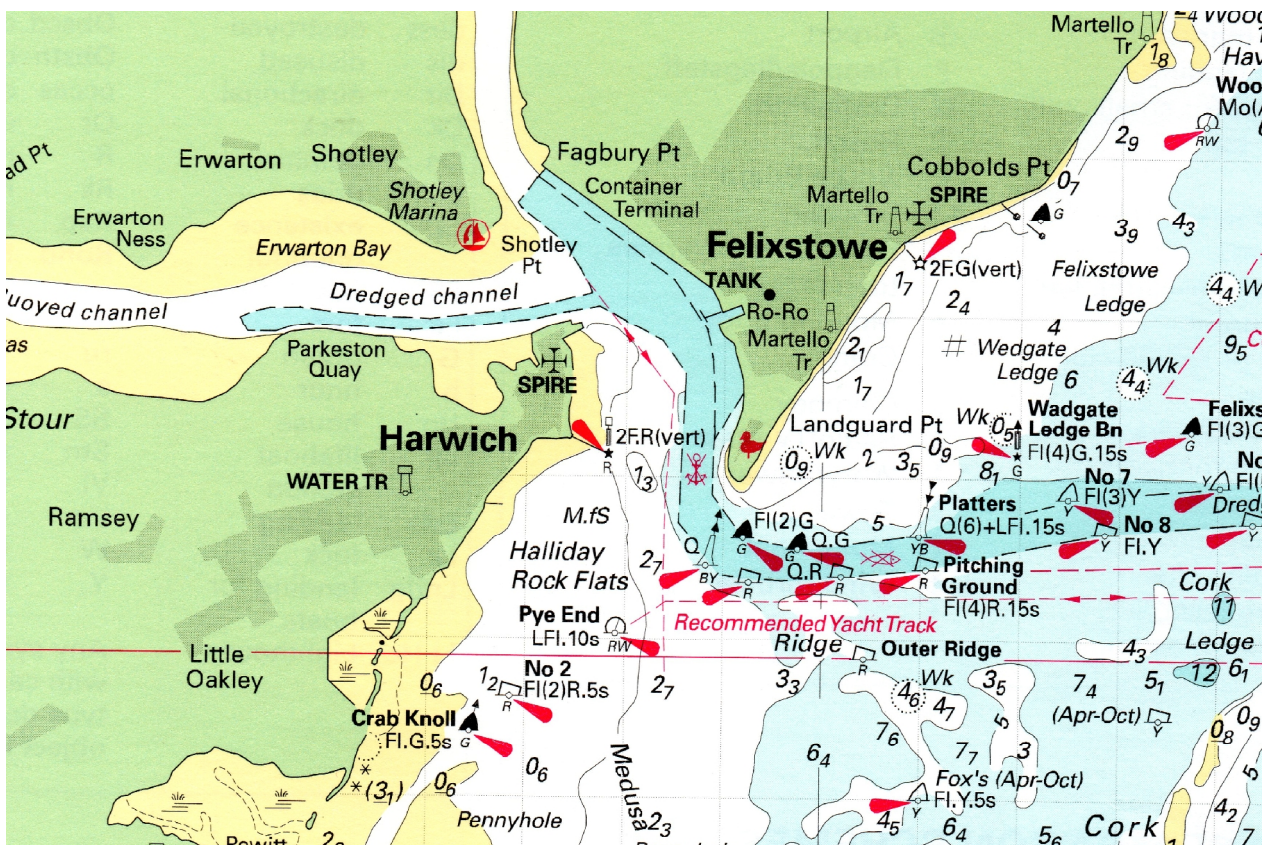
The other three railway groups faced a similar problem to the GWR in 1923 and various OS-based expedients were adopted for their line plans. Regular surveys continued to be put in hand, some of which benefitted from new techniques such as aerial photography.⁶ Nationalisation brought little change, the BR regions largely continuing with their existing methods, but the economies of using Ordnance Survey material became increasingly obvious as the post-war national grid coverage extended, including up to date 1:1250 plans of urban areas. The Western Region used these for several lines such as Birmingham to Leamington (see figure 8), and for Wolverhampton.

Topography on railway line plans could quickly get out of date, and where a newer OS sheet was available this was often purchased and used. When selling

⁶ Gordon Biddle, *The Railway Surveyors*, Ian Allan Ltd & BR Property Board, 1990, p183

off the sites of redundant branch lines in North Wales following the Beeching closures my first task was to acquire 1:2500 OS coverage of the routes in place of the LNWR two-chain scale line plans from the 1870s – although some of the replacements were already fifty years out of date! The BR Property Board, set up in 1970, took over all responsibility for estate matters and continued the production of line plans from revised OS material, but with a rapidly reducing output as computer technology advanced. Part of the Chester to Holyhead route prepared in the 1990s may have been the final plan in traditional form. Network Rail now uses standard OS digital data covering all their lines, with their own on screen overlays to show ownership and other property details.

It is unfortunate that the railway industry made little significant effort to preserve their historic cartography which has largely been dispersed. What remains is held at Network Rail's York Record Office, with some examples surviving in the National Archives,⁷ some county record offices, the National Railway Museum and other public collections.



Part of chart C1, Thames Estuary (1:120,000), one of many charts, historic and modern, on view during the CCS visit to the publishers, Imray Laurie Norrie & Wilson in St Ives, Cambridgeshire in April.

In May, members examined historic naval charts, sketches and surveying instruments during a visit to the archives of the National Maritime Museum.

⁷ Particularly in the RAIL class.

Thomas Colby's book collection

Bill Hines

Amongst the special collections held by Aberystwyth University Library are some 140 volumes from the library of Thomas Colby, one time Director of the Ordnance Survey, who was responsible for much of the initial survey work in Scotland and Ireland. Although the collection is fairly small, it nonetheless provides a fascinating insight into the working practices of the man, and also demonstrates the regard in which he was held by his contemporaries, many of them being eminent scientists and engineers of the day.

Thomas Colby was born in 1784, the son of an officer in the Royal Marines. He was brought up by his aunts in Pembrokeshire and later attended the Royal Military Academy at Woolwich, becoming a Second Lieutenant in the Royal Engineers in December 1801.¹ He came to the notice of Major William Mudge, the then Director of the Ordnance Survey, and was engaged on survey work in the south of England. In 1804 he suffered a bad accident from the bursting of a loaded pistol and lost his left hand. However, this did not affect his surveying activity and he became chief executive officer of the Survey in 1809 when Mudge was appointed as Lieutenant Governor at Woolwich. During the next decade he was responsible for extensive surveying work in Scotland and was also involved in troublesome collaboration with French colleagues after the end of the Napoleonic Wars, connecting up the meridian arcs of British and French surveys.

Colby was made head of the Ordnance Survey in 1820, after the death of Mudge, and became a Fellow of the Royal Society in the same year. In 1824 he was given the task of surveying Ireland and during this work developed a 'compensation bar', known as the 'Colby Bar', which became the standard for base measurement in surveys throughout the world.² The Irish maps were produced to a very high standard but appeared only slowly during the period 1833-1847, by which time Colby had just taken retirement, having been promoted to the rank of Major General. In the later part of his career he had returned to complete surveying work in Scotland and England, which had stalled in the 1820s. He was also involved in some geological survey work in the south west of England. Colby married Elizabeth Boyd of Londonderry in 1828 and there were seven children. After retirement Colby spent some years in Bonn with his family and finally died in New Brighton in 1852.³

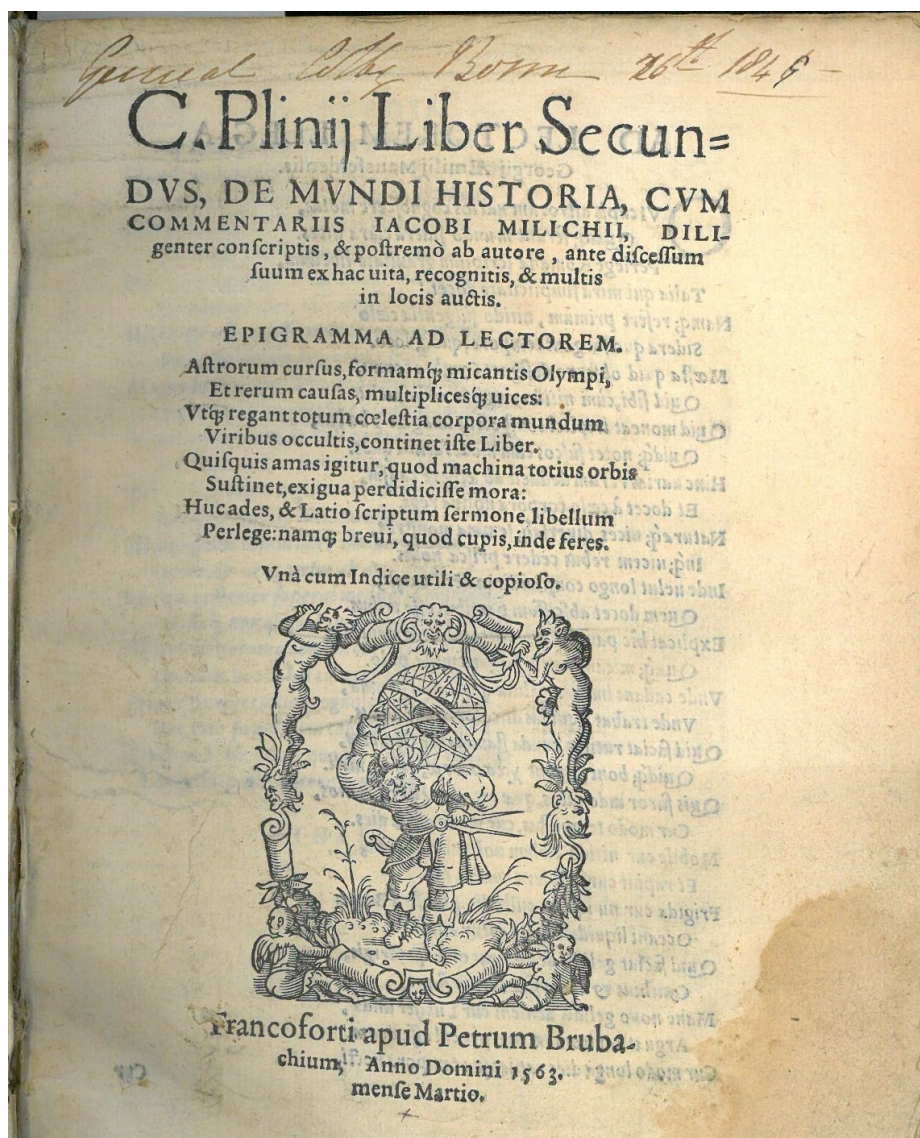
Thomas Colby's book collection came to Aberystwyth University in 1912 as part of a gift from William Henry Colby, a member of the College Council. The majority of the volumes date from the eighteenth and nineteenth centuries and deal with mathematics and surveying, along with a number on other scientific

¹ Further information about Colby is available in JE Portlock, *Memoir of the life of Major-General Colby*, 1869. See also Rachel Hewitt, *Map of a nation: A biography of the Ordnance Survey*, 2010 and Richard Oliver, *The Ordnance Survey in the nineteenth century: Maps money and the growth of government*, 2014.

² For the Colby and Drummond compensation bar see Hewitt pp254-255.

³ Portlock p313 also mentions a period in Belgium.

subjects, but there are also several dictionaries and grammars covering Welsh, Irish etc, which must have been useful in determining names for geographical features. From later years we find a number of presentation volumes from noted scientists and it looks as though Colby dabbled in antiquarian book collection, perhaps as a retirement hobby.



The oldest volume in the collection is a copy of Pliny's *Natural History*, with a commentary by Jacob Milich, dating from 1563. This was acquired in Bonn in 1849 and has Colby's signature on the title page (see left). The volume has an interesting early blind stamped pigskin binding showing the figure of justice. Further antiquarian acquisitions include a New Testament from 1623, a Sainte Bible from 1687, and a Greek testament from 1705 with extensive German annotation, presumably purchased during the Bonn period. Unusually there is also a copy of George Sale's early

translation of the Koran dating from 1734, still regarded as authoritative to this day. Colby's interest in matters both scientific and technical is displayed by his ownership of both volumes of the *Lexicon Technicum*, published by John Harris between 1704 and 1710. This is seen as the predecessor of many of the important eighteenth century dictionaries and encyclopaedias. There are a few important current publications amongst the collection. George Vancouver's *Voyage of Discovery to the North Pacific Ocean and Round the World*, published in three volumes plus maps by Robinson in 1798 would have been an expensive acquisition. Sadly the map volume is lacking in the Aberystwyth holding and seems not to have come to the University.

As one might expect the bulk of the working collection relates to mathematics and surveying. There are around fifty such volumes, ranging in dates from a

Commandinus *Euclid* of 1731 to Frederick Simms *Treatise on the Principal Mathematical Instruments Employed in Surveying, Levelling and Astronomy*, published in 1849. Many of the leading authors in the field are to be found, including Isaac Barrow, Augustus De Morgan and John Leslie. Particular mention should perhaps be made of William Wallace, one time Professor of Mathematics at Edinburgh University, and formerly a master at the Royal Military College at Marlow and Sandhurst. He dedicated his *Geometrical Theorems* of 1839 to Colby in print, 'in testimony of the respect and esteem of his sincere friend'. Two other articles from the Edinburgh Encyclopaedia, on Geometry and Fluxions, written by Wallace, were originally presented by him to William Mudge, Colby's predecessor at the Ordnance Survey. The 1815 article on Fluxions was notable as the first systematic presentation of continental calculus in the UK.⁴ There is also a Mudge autograph in an 1811 *Course of Mathematics* by Charles Hutton, Professor of Mathematics at the Royal Military Academy from 1773-1811. Interestingly William Mudge provides a direct link back to one of the great literary figures of the eighteenth century, since he was a godson of Dr. Samuel Johnson, and we have an account of Johnson visiting when he was a student at Woolwich in the 1770s and presenting him with a guinea and a book.⁵ Not all associations were as happy. The presence of an 1805 copy of *Essai de Geometrie analytique*, written by Jean-Baptiste Biot, the French physicist and mathematician, brings to mind the arguments he had with Colby when they were engaged on surveying work in the Shetland Isles in 1817.⁶ Colby seems to have acquired this volume from Lewis Evans, a noted mathematical lecturer at the Royal Military Academy in the first two decades of the century.

It is interesting to see a number of volumes presented to Colby by some of the leading scientific and scholarly figures of the period, reflecting his position as a Fellow of the Royal Society and supporter of many of the other learned societies which were springing up at that time. These include a copy of Thomas Young's *Elementary Illustrations of the Celestial Mechanics of Laplace* from 1821. Young was Secretary of the Board of Longitude on which Colby served during the 1820s, and was seen by contemporaries as something of a polymath, who also contributed to the decipherment of the Rosetta Stone, and was later praised by Herschel and Einstein. The Reverend William Buckland, one of the fathers of modern geology, presented a copy of his 1819 Oxford inaugural lecture *Vindiciae Geologicae*. Charles Babbage, one of the originators of computing, gave a copy of his *9th Bridgewater Treatise* and also visited Ireland with Colby⁷ and later worked with him on suggestions for the penny post. They were also both founders of the

⁴ For William Wallace (1768-1843) see George Stronach, Maria Panteki article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/28545>

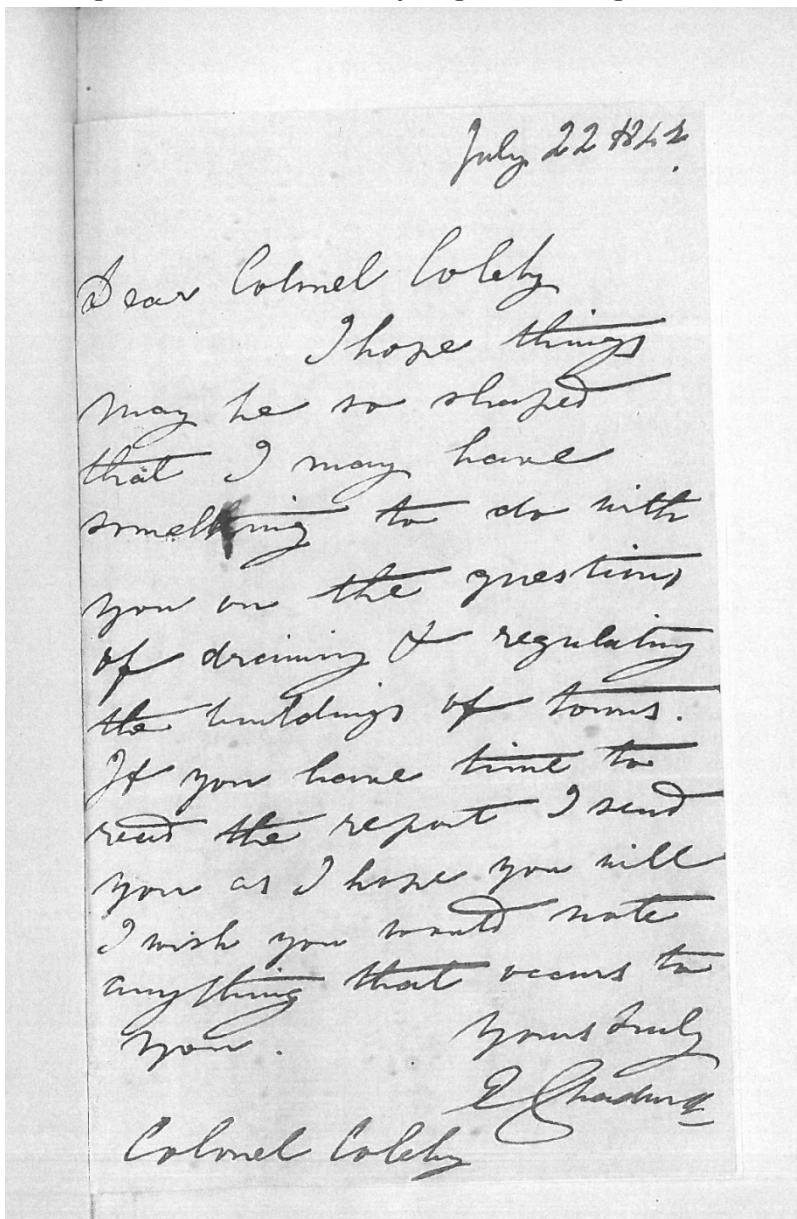
⁵ For William Mudge (1762-1820) see Elizabeth Baigent article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/19488/?back=,19489> and see also Oliver p64 etc. For Johnson anecdote see Hewitt p122.

⁶ See David L Walker, 'Balta Sound and the figure of the earth'. *Sheetlines*, 99, 5-14. See also Hewitt pp226-232.

⁷ See Hewitt p257, 285.

Astronomical Society, and in passing it is worth noting that Colby's 1810 copy of Samuel Vince's *Elements of Astronomy* had previously belonged to Alexander D'Arblay, student at Christ's College Cambridge, friend of Babbage, and son of the author Fanny Burney! Henry Raper, Secretary to the Royal Astronomical Society, presented a copy of his 1840 book on *Navigation and Nautical Astronomy* which won him the Founder's Medal of the Royal Geographical Society in 1841. A fellow military officer, Charles William Pasley, a leading expert on military fortification and demolition, presented a copy of his 1834 book on standards for weights and measures.⁸ The impact of Colby's work on developing areas like new railways is shown by William Galbraith's gift of his 1842 *Trigonometrical Surveying, Levelling and Railway Engineering*.

Also in 1842 Colby was approached by Edwin Chadwick, the social reformer, with a suggestion that he might support the work on sanitation and building in towns. An autograph letter from Chadwick to Colby (see left) survives as an insert into a *Report on the Sanitary Condition of the Labouring Population of Great Britain*.⁹ Later reports of the Metropolitan Sanitary Commission for 1848 and the Commissioners for Large Towns and Populous Districts 1844 are also present in the collection along with a few reports of the Poor Law Commissioners. Undoubtedly Colby's work in the 1840s on large scale mapping in the industrial north will have contributed to these efforts. On occasion Colby also worked with notable figures from the arts. Between 1833-1843 George Petrie, the Irish artist and antiquary, was employed as head of the topographical department



⁸ For Colby's earlier links with Pasley in the 1820s see Hewitt pp243-245. Hewitt provides an interesting anecdote about Jane Austen's enthusiasm for Pasley's work.

⁹ For Edwin Chadwick (1800-1890) see Peter Mandler article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/5013?docPos=1> and also see references in Oliver eg pp164, 184-5.

of the Irish survey, and two of his monographs from this period, on Tara hill and an ancient reliquary were presented to Colby.¹⁰

In terms of presentation volumes undoubtedly the prize example is Robert Stevenson's 1824 *Account of the Bell Rock Lighthouse*. This is a splendid quarto volume published by Constable with twenty three engravings and comes with a four page letter written by Stevenson to Colby in October 1824. Robert Stevenson was engineer to the Northern Lighthouse Board for fifty years and responsible for the construction of lights all along the coast.¹¹ This letter has not been published elsewhere and does provide some interesting material. Stevenson gives an account of his recent visit to France to visit lighthouses there. He also met up with the engineer Augustin-Jean Fresnel who had developed the Fresnel lens, widely used in lighthouses of the period. Fresnel had demonstrated his experimental apparatus in Montmartre and Stevenson observes that he has been granted £1100 by the Lighthouse Board to purchase a lens and conduct further experiments in Britain. Sadly Colby's response is very brief, merely acknowledging the interesting book, which he had found on his table when he returned from Ireland.

Indeed it is fair to comment that Colby made very little annotation in the books that he owned. The earliest signature appears to be 'Lieutenant Colby – February 19th, 1805' in his copy of Robert Simson's *Elements of the Conic Sections*, and the latest around 1850 in Bonn. Some of the more expensive volumes, such as *Lexicon Technicum*, seem to have been purchased after he acquired the rank of Major and presumably had more money to spare for his antiquarian interests. There are a few annotations in some of the mathematical volumes acquired from William Mudge, but these seem to relate to workings made by Mudge or the author William Wallace.

Although there are around 120 titles identified as part of the 1912 Colby donation in the old library accession lists there are several examples where pamphlets or works by the same author have been bound together into a single book. There are also a few multi volume works. A few items have been rebound over the years after normal wear and tear. Some half dozen volumes seem to have gone missing over the past century. These include Hugh Blair, *Lectures on Rhetoric*, 1801, a couple of Irish bibles and Sir Everard Home *Lectures on Comparative Anatomy*, 1814, where the library took the inexplicable decision to dispose of volume 2 while retaining volume 1! The most regrettable loss is Charles Babbage's *Observations on the Temple of Serapis*, privately printed in 1847, which currently commands high prices from antiquarian booksellers. It is possible that further volumes may yet come to light in the library store, since there are a few books which have the Colby ownership signature without the later Aberystwyth University bookplate or note in the accession lists.

¹⁰ See Hewitt pp274-276.

¹¹ For Robert Stevenson (1772-1850) see Roland Paxton article in *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/26436?docPos=2> . Reference to Colby, Stevenson and Fresnel is found in Theresa Levitt, *A short bright flash: Augustin Fresnel and the birth of the modern lighthouse*, 2013.

Colby must have owned a large map collection but we have little evidence of this. Pleasingly there is a full set of George Bellas Greenough *Geological Map of England and Wales*, published in 1820, although with a date of 1819. The only other possible item in the collection is a set of William Mudge's 1805 maps for Essex, with a dealer's label from William Faden 'Geographer to His Majesty and to His Royal Highness the Prince of Wales' of 5 Charing Cross. However, there is nothing in the accession file to tie this item specifically to Colby, although it occurs next to several books from the bequest.¹²

Although the books were marked with a donation label recording them as ex-libris volumes from the collection of Major-General TF Colby, when they arrived at the University in December 1912 they were scattered amongst the general collections with no indication of provenance being given in the catalogue. Only now has the opportunity been taken to bring the items together and analyse the collection, and it is hoped that they will form a useful resource for future research into the early days of the Ordnance Survey and Colby's activities.

Thomas Colby Bequest – Aberystwyth University. Short Title List.

Full bibliographical information for most of the titles in this list is available through the Aberystwyth University library catalogue.

George Adams. *A treatise describing and explaining the construction and use of new celestial and terrestrial globes*. 1766

Robert Ainsworth. *Thesaurus linguae latinae*. New edition. 1796

George Biddell Airy. *Gravitation*. 1834

Francesco d'Alberti di Villanova. *Grand dictionnaire francais-italien*. 3rd edition. 1811

Samuel Angell. *Sculptured metopes discovered amongst the ruins of the temples of the ancient city of Selinus in Sicily*. 1826

Francois Arago. *Historical elege of James Watt*. 1839

George Atwood. *A dissertation on the construction and properties of arches*. 1801

Charles Babbage. *Examples of the solutions of functional equations*. 1820

Charles Babbage. *The ninth Bridgewater treatise*. 2nd edition. 1839

Charles Babbage. *Observations on the temple of Serapis*. 1847. Item not located

Francis Baily. *On a method of fixing a transit instrument exactly in the meridian*. 1821

Peter Barlow. *An elementary investigation of the theory of numbers*. 1811

Peter Barlow. *An essay on magnetic attractions*. 1823

Peter Barlow. *New mathematical tables*. 1814

Peter Barlow. *A table of hyperbolic logarithms*. N.d.

Isaac Barrow. *Geometrical lectures*. 1735

Isaac Barrow. *The usefulness of mathematical learning*. 1734

Jacob Berzelius. *Die anwendung des lothrohrs in der chemie und mineralogie*. 1828

An Biobla naomhtha. 1830. Item not located

Jean-Baptiste Biot. *Essai de geometrie analytique*. 2nd edition. 1805

William Blackstone. *Commentaries on the laws of England*. 15th edition. 1809

¹² Portlock p313 mentions Colby's generosity in presenting many Ordnance Survey maps to the Institution of Civil Engineers as soon as they were published

- Hugh Blair. *Lectures on rhetoric and belles lettres*. 1801. Item not located
- Miles Bland. *Algebraical problems, producing simple and quadratic equations, with their solutions*. 6th edition 1832
- William Buckland. *Geology and mineralogy considered with reference to natural theology*. 1836
- William Buckland. *Reliquae diluvianae*. 1823
- William Buckland. *Vindiciae geologicae*. 1820
- Oliver Byrne. *New and improved system of logarithms*. 1838
- Antoine Cagnoli. *Trigonometrie rectiligne et spherique*. 2nd edition. 1808
- John Campbell. *A political survey of Britain*. 1774
- Samuel Hunter Christie. *On the laws according to which masses of iron influence magnetic needles*. 1821
- Federicus Commandinus. *Euclidis elementorum*. 1731
- John Davies. *Antiquae linguae Britannicae*. New edition. 1809
- Humphry Davy. *Elements of agricultural chemistry*. 2nd edition. 1814
- Augustus de Morgan. *The differential and integral calculus*. 1842
- Augustus de Morgan. *The elements of algebra preliminary to the differential calculus*. 1837
- George Dickie. *Flora abredonensis*. 1838
- William Emerson. *The art of surveying or measuring land*. 1770
- William Emerson. *Calculation, libration, and mensuration*. 1770
- William Emerson. *Chronology, or, the art of reckoning time*. 1770
- William Emerson. *The doctrine of combinations, permutations and combinations of quantities*. 1770
- Thomas Evans. *An English and Welsh vocabulary*. 1804
- A few minutes advice to gentlemen of landed property*. 1800
- William Galbraith. *A comprehensive treatise on land surveying*. 1842
- James Glenie. *The antecedental calculus*. 1793
- James Glenie. *The doctrine of universal comparison, or general proportion*. 1789
- Willem Jacob's Gravesande. *The elements of universal mathematics, or algebra*. 2nd edition. 1752.
- George Bellough Greenough. *A geological map of England and Wales*. 1819
- Olinthus Gregory. *Elements of plane and spherical trigonometry*. 1816
- Olinthus Gregory. *Mathematics for practical men*. 3rd edition. 1848
- Stephen Groombridge. *Comparison of the North Polar distances of thirty eight principal fixed stars*. 1812
- Hugh Hamilton. *A geometrical treatise of the conic sections*. 1773
- G. Hamoniere. *Grammaire Francoise a l'usage des Russes*. 1816
- James Harris. *Hermes*. 2nd edition. 1765
- James Harris. *Three treatises: the first concerning art, the second music, painting, and poetry, the third concerning happiness*. 2nd edition. 1765
- John Harris. *Lexicon technicum: or an universal English dictionary of arts and sciences*. 1704-10

- John Herschel. A Collection of examples of the applications of the calculus of finite differences. 1820
- Theophilus Holdred. A new method of solving equations. 1820
- Everard Home. Lectures on comparative anatomy. 1814. Lacks volume 2.
- David Hume. Essays and treatises on several subjects. New edition. 1777
- Charles Hutton. *A course of mathematics*. 6th edition. 1811
- Charles Hutton. *A mathematical and philosophical dictionary*. 1796
- Gustav Adolph Jahn. *Tafeln der sechststelligen logarithmen*. 1844
- James Johnston. *Lectures on agricultural chemistry and geology*. 1844
- Isaac Jones. *Grammadeg Cymreig*. 1832
- Sylvestre Francois Lacroix. *Traite de calcul differentiel et de calcul integral*. 1806. Item not located
- Adrien Marie Legendre. *Elements de geometrie*. 9th edition 1812
- John Leslie. *Elements of geometry, geometrical analysis, and plane trigonometry*. 2nd edition. 1811.
- John Leslie. *Elements of geometry, and plane trigonometry*. 4th edition. 1820
- John Leslie. *Geometrical analysis and geometry of curve lines*. 1821
- Humphrey Lloyd. *Six lectures on the wave theory of light*. 1836
- Peter Macfarlane. *A new and copious vocabulary, in two parts... English and Gaelic*. 1815
- Colin Maclaurin. *A treatise of algebra in three parts*. 2nd edition. 1756
- General de Malortie. *A treatise on topography*. 1825
- Lorenzo Mascheroni. *Geometrie du compas*. 1798
- Metropolitan Sanitary Commission. 1st and 2nd *Report of the Commissioners*. 1848
- Robert Mushet. *A series of tables, exhibiting the gain and loss to the fundholder arising from the fluctuations in the value of the currency*. 1821
- Peter Nicholson. *The principles of architecture*. 4th edition. 1836
- Novum testamentum Graecum*. 1705
- Charles William Pasley. *Observations on the expediency and practicability of simplifying and improving the measures, weights, and money used in this country*. 1834
- George Peacock. *A collection of examples of the applications of the differential and integral calculus*. 1820
- George Petrie. *An account of the ancient Irish reliquary called the Domnach-Airgid*. 1838
- George Petrie. *On the history and antiquities of Tara Hill*. N.d.
- Philo of Alexandria. *Philonis judaei opera omnia*. 1828-1830
- John Playfair. *Dissertation on the progress of mathematical and physical science, since the revival of letters in Europe*. [From the Encyclopedia Britannica.]
- John Playfair. *Elements of geometry, containing the first six books of Euclid*. 4th edition. 1814
- Plinius Secundus. *Liber secundus, de mundi historia*. 1563
- William Owen Pughe. *A grammar of the Welsh language*. 2nd edition. 1832
- Pythias. *A vindication of Mr. Lancaster's system of education*. 1812

- Henry Raper. *The practice of navigation and nautical astronomy*. 1840
Report...into the sanitary condition of the labouring population of Great Britain. 1842/3
Report of the Commissioners for inquiring into the state of large towns and populous districts. 1844
Reports of the Poor Law Commission. 1836-1848. incomplete
 Thomas Richards. *A Welsh grammar*. 1804
 Abram Robertson. *A geometrical treatise of conic sections*. 1802
La Sainte Bible. 1687
 George Sale. *The Koran*. 1734
 Nicholas Salmon. *Apxai; or, the evenings of Southill*. 1806
 Nicholas Saunderson. *The method of fluxions applied to a select number of useful problems*. 1756
 William Siborn. *A practical treatise on topographical surveying and drawing*. 1827.
 Item not located
 Frederick Simms. *A treatise on the principal mathematical instruments employed in surveying, levelling and astronomy*. 7th edition. 1849
 Robert Simson. *Elements of the conic sections*. 1814
 Robert Stevenson. *An account of the Bell Rock lighthouse*. 1824
 Michael Taylor. *Tables of logarithms of all numbers from 1 to 101000*. 1792
Testamentum novum. 1623
 Benjamin Thompson, Count Rumford. *Philosophical papers*. 1802
Tiomuadh nuadh. N.d. Item not located
 Sharon Turner. *The history of the reign of Henry the Eighth*. 1826
 George Vancouver. *A voyage of discovery to the North Pacific Ocean, and round the world*. 1798.
 Samuel Vince. *Elements of astronomy*. 3rd edition. 1810
 Samuel Vince. *The principles of fluxions*. 4th edition. 1812
 Thomas Wallace. *An essay on the manufactures of Ireland*. 1798
 William Wallace. *Geometrical theorems and analytical formulae*. 1839
 William Wallace. *Geometry*. [From the Edinburgh Encyclopedia]
 William Wallace. *A treatise on fluxions*. [From the Edinburgh Encyclopedia]
 John Wallis. *Grammatica linguae Anglicanae*. 6th edition 1765
 Julius Ludwig Weisbach. *Lehrbuch der ingenieur und maschinen mechanik*. 1850-1852
 Robert Willis. *Principles of mechanism*. 1841
 James Wood. *The elements of algebra*. 9th edition. 1830
 Thomas Young. *Elementary illustrations of the celestial mechanics of Laplace*. 1821

Wynnstay Hall and the School of Military Survey

WN Saunders¹



Wynnstay Hall, Ruabon, home of Survey Training Centre from 1941 to 1945

When war was declared in 1939, soldier-surveyors of the Royal Engineers who had been working in a quasi-civilian capacity carrying out field surveys for the Ordnance Survey donned their uniforms and reported for duty at the 19th Field Survey Company in Fort Widley, one of the forts on Portsdown Hill overlooking Portsmouth.

They were joined by their fellow tradesmen in the reprographic and printing trades who had been working at the Ordnance Survey office in Southampton. The resultant unit formed the nucleus of further Field Survey Companies who were based at the neighbouring Fort Southwick whilst the remainder became the Survey Training Centre and trained new recruits in the trades involved in map-making. By the following year the demand for Survey services increased so rapidly that it was necessary to find more suitable premises with better training facilities and in March 1941 the move was made to Wynnstay Hall at Ruabon. The forts on Portsdown Hill were eagerly snapped up by the Royal Navy who are still there today.

At Ruabon the Hall itself housed the lecture rooms and the administration staff. The stable blocks and other outbuildings were converted to house cameras, plate-making, proofing presses and printing machines. The main accommodation

¹ Based on the talk given at the AGM with additional information supplied by Mike Nolan and Alan Gordon, to whom many thanks.

was in a hutted camp which was erected just to the east of the main grounds near School Lodge. This consisting of Nissen huts for sleeping quarters, ablution blocks, a kitchen and dining hall, NAAFI canteen and sick quarters.

For the next four years the Centre trained thousands of officers, officer cadets and servicemen (and women of the ATS) in the many trades required to satisfy the Army's requirements for millions of maps to cover all the theatres of war from Iceland to the Far East.

The main trades taught were:

- Field surveys to form the accurate framework required for reliable mapping and plane table surveys for rapid mapping of accessible areas. This training was carried out on the slopes of Ruabon Mountain and the area around Pentre Clawdd
- Air surveys - essential in wartime to map enemy held territory or to revise existing maps.
- The reprographic trades of photography, lithographic plate making and printing. When the occasion arose as in the run-up to D-Day the presses were used to print thousands of maps of the invasion beaches.

On completion of their course the other ranks would take a trade test and if successful were granted the tradesman's pay of 4/3d (22p) a day! They were then liable to be posted to a survey unit anywhere they were needed.



For the bulk of the students their time at Wynnstay came as a welcome respite in their rigorous training programme. As sappers in the Royal Engineers they had already attended an infantry training course to teach them the basics of soldiering. They had then been to the Training Battalion, RE, at Clitheroe in Lancashire where they had an intensive course in the Sapper skills of demolitions, mine laying and clearance and bridge building. At Wynnstay the discipline was more relaxed and many of the recruits were continuing in their peacetime professions. Many of the draughtsmen were recruited from cartographic companies or Fleet

Street. The illustration (*above*) is by an unknown hand, in the style of the cartoonist Fougasse (Cyril Kenneth Bird), who had served in World War One and whose skills were widely used by the Ministry of Information in WWII.

Although the camp had limited recreational facilities a walk down the long drive (which at that time had not been blocked by the bypass) led to Ruabon, which had a lively High Street with shops, a cinema and a canteen in a chapel staffed by kindly local ladies. A short bus ride away was Cefn Mawr with two cinemas and many pubs whilst in the opposite direction was Wrexham with all its facilities. At this time the railway station, at which most people would arrive and depart, had a refreshment room and bookstall. Trains ran frequently to

Paddington, Birkenhead and Barmouth via Llangollen. Crosville buses provided a cheap and reliable service to Cefn Mawr, Llangollen and Wrexham. Romance blossomed for some lucky ones and there are at least three couples still in the area whose marriages date from this period.

Bryn Howel

With unusual foresight the War Office had decided that a cadre of regular soldiers trained as surveyors and cartographers would be required to form the backbone of Survey units both during and after the war and elected to continue the programme of recruiting apprentice tradesmen on regular service. Such a scheme had been in operation pre-war at Southampton – one of these ‘Scheme A boys’ was awarded the George Medal for his heroism when the Ordnance Survey premises at Southampton were bombed.

Accordingly, at the end of 1941 about fifty sixteen-year-old boys were recruited from schools all over the country and housed initially at Barton-on-Sea near Christchurch in Hampshire. In 1943 they moved nearer to the Survey Training Centre at Bryn Howel, an empty country house. The Vale of Llangollen proved to be an ideal training ground for potential surveyors. The boys participated in many local activities, putting on ‘gym displays’ whilst their dance band played at the Llangollen Town Hall for Saturday evening dances.

When the war ended the Survey Training Centre, with its Boys' Wing moved initially to the grounds of another stately house, Longleat in Wiltshire, where it was housed in a former US Army hospital. It later moved to another hatted former World War Two hospital at Hermitage near Newbury where it was renamed the School of Military Survey. The camp was rebuilt and ceremonially opened by HM the Queen in 1980 and on the occasion of the 250th anniversary of the first military surveys it received the accolade ‘Royal’ and was renamed the ‘Royal School of Military Survey’.



When the wartime surveyors and tradesmen moved into civilian life after the war many still followed their wartime trades and for years it was difficult to find any mapping organization at home or overseas which didn't have at least one person on their staff who remembered their time at Bryn Howel or Wynnstay with affection.

The author at the trig point on Ruabon Mountain (502m, SJ 235 453). The cast-in grenade shows that this is one of a series erected by trainee surveyors from Wynnstay in about 1944. There are probably about six in the surrounding area, including one on Selattyn Hill, near Oswestry (373m, SJ 236 342). These pillars were part of the re-triangulation of Great Britain organised by Major M. Hotine, R.E. which started in 1935.

Developments at Maybush

The old Ordnance Survey Maybush site in Southampton has been redeveloped and a lot of houses have been built there. The large mound at the western side of the site is still there with the triangulation pillar on top, but the pillar is in need of some TLC. Crabwood House has been extended a bit, and the flush bracket is still on the front face, but now painted over. The conservatory at the back is also still there.

The developers and Southampton City Council have honoured some of the great and good past OS luminaries by naming roads after them. However, the road with the name plate shown on the photo below must be in honour of Major General William Roy, the inspiration behind the creation of the Ordnance Survey; (morning coffees spluttered into toast and marmalade at this sight!) The great man must be spinning in his grave!

Google Maps and other sources show the new road names and most are OK, (references to Watts, Kern, Tavistock, etc) and there is also Charles Arden Close (should this one really be Charles Arden Close Close?). Regrettably there is no sign of Richmond Road or Lennox Lane.

Watts Close will refer to a firm of instrument makers who supplied OS with theodolites and levels. Similarly Kern Close will refer to Kern, the Swiss makers of survey equipment, particularly the DK-RT self-reducing tacheometer theodolite which was used to provide the detail control for many of the 1:1250 scale Resurvey towns in the 1950s to the 1970s and the subsequent Continuous Revision. Tavistock Road will refer to the 3½-inch and 5-inch Tavistock theodolites made by Cooke Troughton & Simms, and which were used to provide triangulation and minor control points for the 1:1250 scale resurveys and the overhaul of the 1:2500 scale County Series mapping. Ramsden Road is surely in honour of Jesse Ramsden, the maker of the 'Great Horizontal Circle' whose invoice for it was the first use of the name 'Ordnance Survey'. Colby Street and Charles Arden Close are obvious references to early DGs. However, where did Cardinal Place originate?

With development continuing in the area of the now demolished Main Building, (at one time briefly known as the 'William Roy Building'), and the now demolished staff restaurant, there is still time for 'Mudge' and 'James' to make an

appearance; perhaps also 'Davidson', 'Hotine', 'Irwin', 'Winterbotham', 'MacLeod', 'Edge', 'Smith', 'McMaster', 'Rhind', or even 'Lawrence'?

(Compiled from an exchange of emails between Dave Gaul, retired OS Trig & Levelling surveyor, Chris Leteve, retired OS Geodetic Services surveyor and David Andrews, retired OS Field Survey Group Chief Surveyor.)



Further observations on the map of East Anglia

Rob Wheeler

In *Sheetlines* 100, I put forward the idea that the information on the overprints in *Maps from the Past* - 5 was not derived from actual survey by the OS but rather from data already held by other bodies or collected by local military forces. I observed that this hypothesis would lead one to expect significant variation in content from one area to another.¹ I have recently been able to inspect another sheet of the series, 109NE. This article describes the differences from the Cambridge sheet.

The four most obvious differences in the selection of data are as follows.

- The red disc, for bridges not capable of carrying 7 tons, is not used.
- The culvert symbol is extensively used, always in conjunction with annotation for material and width of carriageway. It seems to be treated as a variant of the bridge symbol, perhaps for use when the waterway being crossed was below a certain width.
- There are a good half-dozen watering places for traction engines. Most can accommodate only a single engine but a couple can manage three engines.
- The Camping Ground symbol does not appear – though this may be because the area covered lacks any country houses with parkland extensive enough to be used in this way.
- The gate symbol is not used.

Perhaps more important than these is a difference in the thoroughness with which streams and earthworks have been measured. To take streams first, almost every watercourse is measured. The utility of such annotations as “20' - 3'” can be questioned: one really needs to know how frequent and how usable the narrower places are. But one gains the impression that orders were issued to measure every stream, and every stream was duly measured. The only exception is in areas of coastal marshes, where the watercourses are so numerous as to render movement across the area impracticable.

Depths of channels are given in the estuary of the Blackwater, but not in that of the River Crouch. These normally take the form of depths at low tide (*L. T.*) up to the point at which navigation at low tide ceases to be practicable; from that point high-tide (*H. T.*) depths are given. Where streams have *H.T.* measurements, any width figures are followed by *WIDE* to avoid any misunderstanding.

In the case of earthworks, railway cuttings and embankments have been measured every 400 yards or so. Along the coast, the height of every bank is given. Just one section seems to have presented too much variability for this, leading to the annotation *SEA WALL BROKEN DOWN IN MANY PLACES FROM HERE NORTHWARDS*. In defence of the Cambridge map, it may be observed that the railway earthworks on that sheet are mostly insubstantial. However, there are flood banks against the Cam below Waterbeach and no attempt was made to

1 Rob Wheeler, ‘Observations on *Maps from the Past* 5’, *Sheetlines* 100 (2014), 53-58.

indicate their height.

The other aspect of Sheet 109NE that is really striking is that the compilers have gone out of their way to provide information they thought of military importance, even on matters regarding which (to judge by the Key) no instructions had been given. Thus a couple of causeways to islands are noted as *PASSABLE TWO HOURS BEFORE AND AFTER LOW TIDE*. Wharves and piers are noted with the depth of water (L. T.) as well as their plan dimensions. Certain areas which might be thought marshy are marked *PASSABLE FOR INFANTRY*. Dimensions (including depth) are given for the lock at the entry to Heybridge basin. Ferries have such helpful notes as "3 Boats 1 Raft (1 Wagon or 3 horses)". It appears to me that such information is far more likely to have been collected by an infantry officer than by a surveyor.

One further category of information is *BARGES LOAD HERE*, found at numerous creeks on the south side of the Blackwater, not just those leading to the Blackwater itself, but sewers facing the open sea. In contrast, the southern half of the map shows no interest whatsoever in barge traffic. It seems to have been a particular concern of whoever was responsible for one specific area of the map. Why might barges have been thought important? It could of course have been regarded merely as another aspect of communications infrastructure, like the dimensions of wharves. But in 1903, Erskine Childers had published *The Riddle of the Sands*, a novel which hinges on a dastardly German plot to invade this country by loading troops onto barges in a multiplicity of tiny creeks, where the concentration of forces would not be noticed. Perhaps we should see the map as reflecting a view, by at least one officer, that this was indeed a viable tactic; hence such loading / unloading places should be marked.



Not so secret tower

Paul Kennett

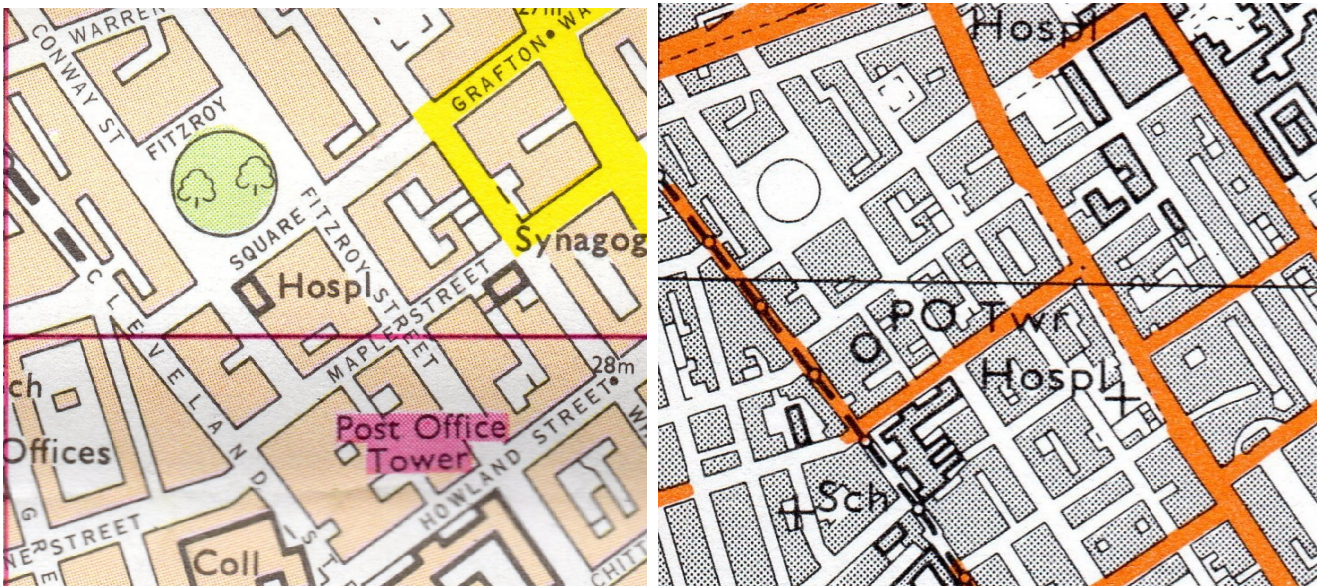
Much has been written about security deletions on OS maps but an allegation that something is deleted which is in fact, clearly shown is, I think, unprecedented.

According to Wikipedia,¹ ‘upon its completion, the location of BT Tower [now Telecom Tower, previously Post Office Tower] was designated an official secret and it did not appear on Ordnance Survey maps, despite being a 177-metre (581 ft) tall structure in the middle of central London that was open to the public for about 15 years.’

Wikipedia refers to another website² which states ‘Despite the BT Tower being one of most recognisable and conspicuous buildings in London, it was classed as an ‘official secret’ until fairly recently, and taking or possessing photos of the tower was technically an offence under the Official Secrets Act. In line with its ‘secret’ status, this 620ft London landmark was also omitted from all Ordnance Survey maps until the mid 1990s.’

Furthermore, Kate Hoey MP stated in Parliament in February 1993: ‘Hon. Members have given examples of seemingly trivial information that remains officially secret. An example that has not been mentioned [...] is the absence of the British Telecom tower from Ordnance Survey maps. I hope that I am covered by parliamentary privilege when I reveal that the British Telecom tower does exist and that its address is 60 Cleveland Street, London.’³

I offer these two images to show that Kate Hoey apparently failed to consult an OS map before speaking – and to remind us to treat Wikipedia with a certain amount of caution!



Post Office Tower marked on Ordnance Survey 1:10,000 ‘Central London’, 1981 and 1:25,000 TQ28/38, 1971

¹ https://en.wikipedia.org/wiki/BT_Tower

² <http://www.urban75.org/london/telecom.html>

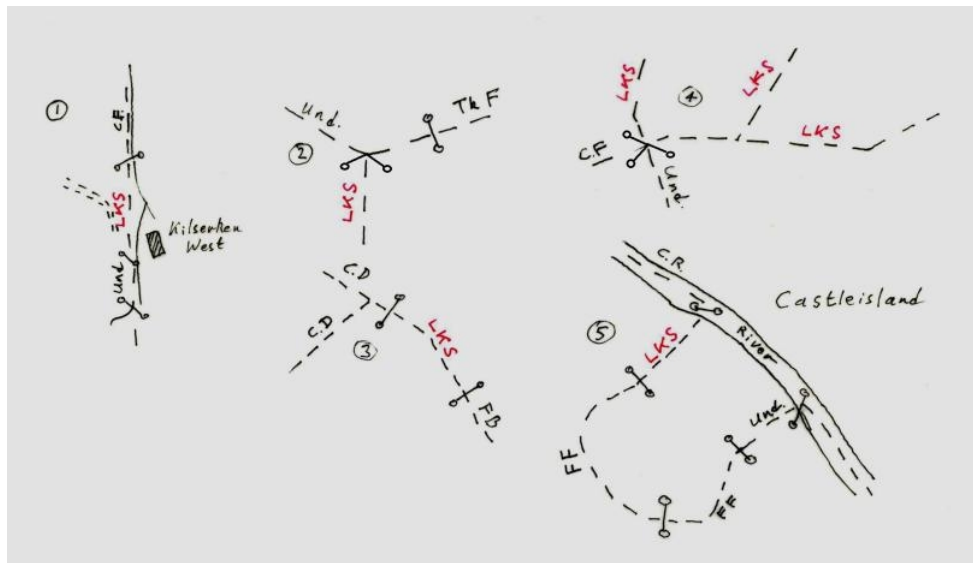
³ <http://www.publications.parliament.uk/pa/cm199293/cmhansrd/1993-02-19/Debate-5.html>

The meaning of the mereing

David EM Andrews

Following my article *Merely a question of boundaries*,¹ John Cole raised a query with me about a strange boundary mereing he had encountered on some Irish County Series mapping. Neither John nor I had ever encountered the mereing 'LKS' before, and all John's attempts to discover the meaning had so far failed. Even the best authority that I could think of, one Richard Oliver, had never come across it before.

Here are a few examples that John had sketched and I was going to set the readers of *Sheetlines* a challenge to see if anyone could explain this mereing.



That is, until John stumbled across an entry in the *Blue Book 1966, Instructions to Surveyors and Revisers*, (the OSI equivalent of the OSGB *Red Book*). Under the indexed terms is *Lockspits will not be shown in bogs except where they occur on County, Barony and Townland Boundaries*. John's examples appear on or close to bogs, and seem to be logical places for lockspits, as they are lines that seem to join up gaps in boundaries that are otherwise marked by more permanent features.

Many English dictionaries do not have an entry for 'lockspit', but according to the on-line Oxford Dictionaries a lockspit is:

"A narrow trench dug to mark out a boundary or to indicate lines of work in construction or civil engineering projects".

The Scottish National Dictionary (1700–) defines lockspit (also *loxpit*) as:

I. *v.* To mark out a boundary or limit by cutting a furrow with a spade or plough or by a cross-trench.

II. *n.* A cut, furrow or cross-trench made for this purpose.

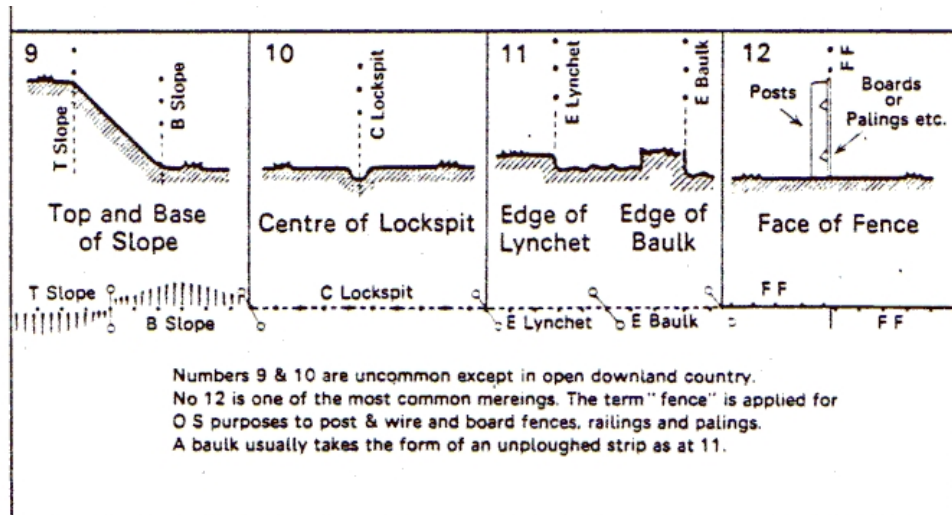
[From *lock*, in the sense of enclose, + *spit*, a cut made by a spade.]

So it appears the mystery is solved (unless someone has another explanation!)

¹ *Sheetlines* 103, 31.

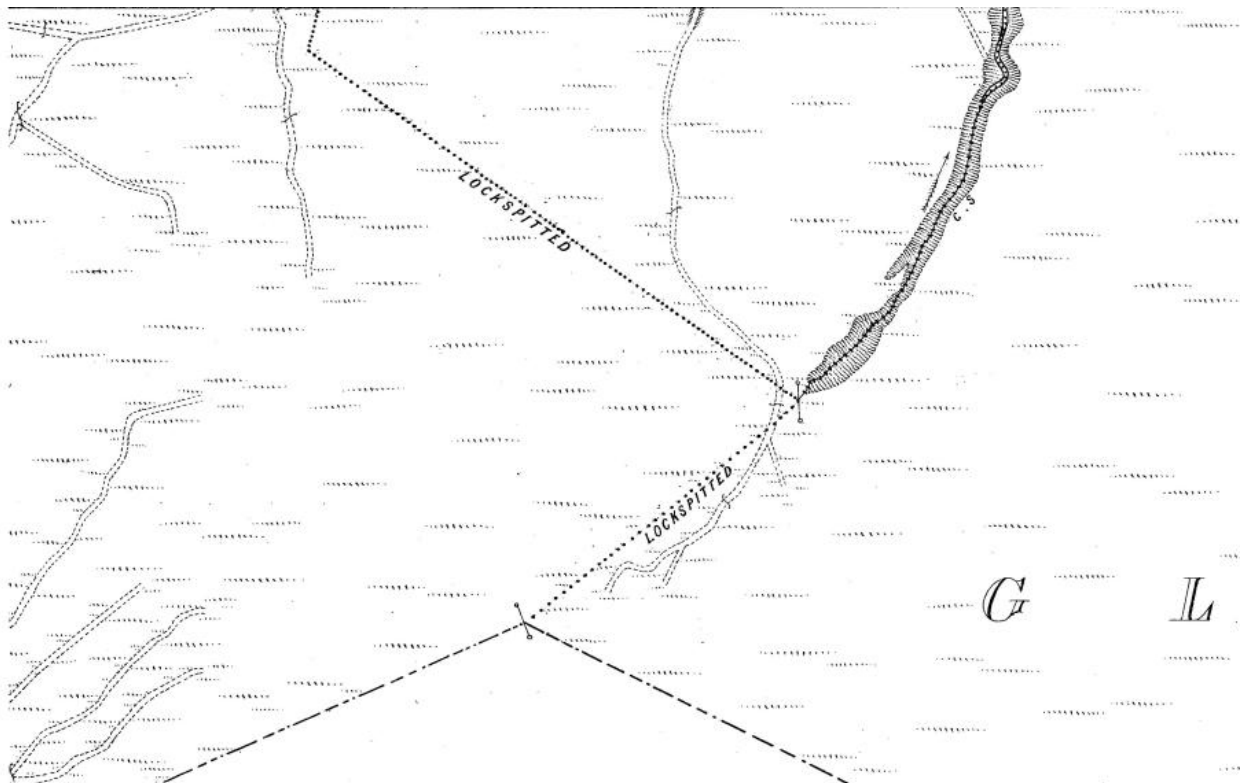
Interestingly *Public boundaries and Ordnance Survey 1840-1980*² at pages 311 and 312, (see below), mentions lockspits being used to mere boundaries, but the actual mereing abbreviation used is "C Lockspit", (for Centre of Lockspit).

Lockspits: Example 10. Not common as a mereing and sometimes found as "C Furrow" or "C Grip" or even "C Swank".



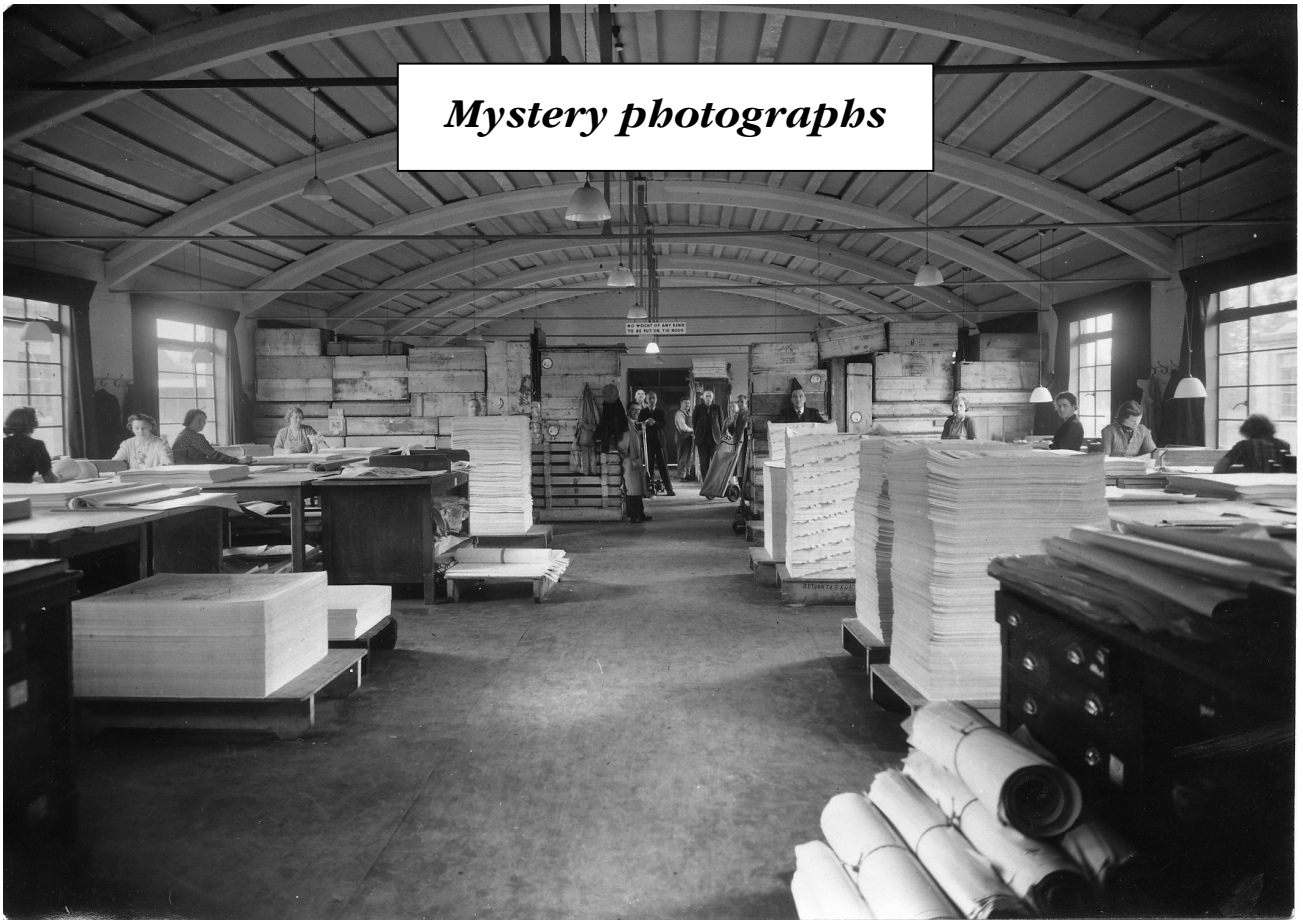
It would seem that the abbreviation 'LKS' was never used by OSGB, only by OSI, (and apparently not used after 1940).

Below is another example which has just come to light, on 1:2500 scale sheet County Dublin XXIV.16 published 1866.



² JRS. Booth MBE, Ordnance Survey, 1986.

Mystery photographs



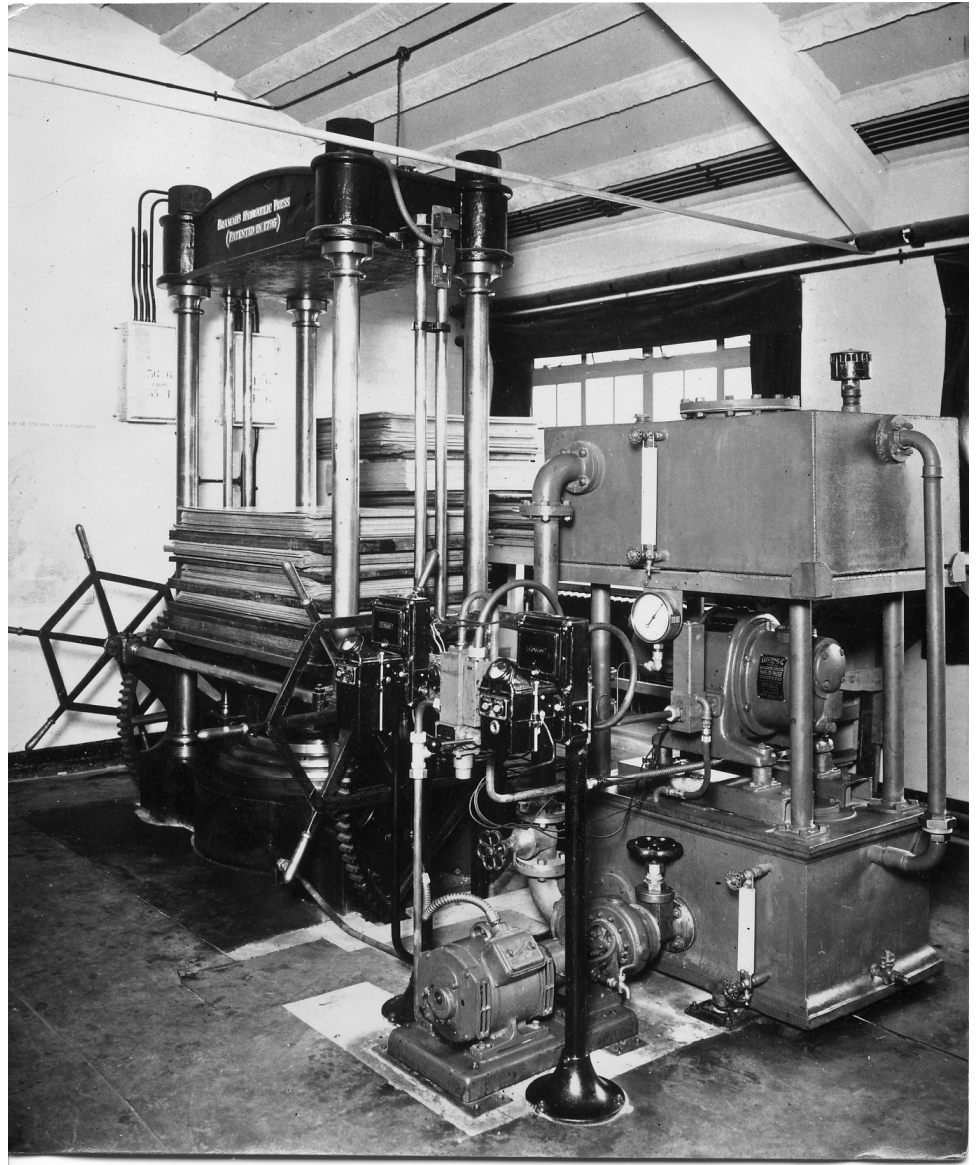
Mike Nolan writes: *I have a collection of about sixty black and white photos of various pieces of machinery and operatives supposedly taken in an Ordnance Survey factory (or factories) during World War Two, but clearly not London Road.*



Nineteen of the photos show locations in a building or buildings with a curved roof over curved concrete beams.

Much of the equipment is identifiable, particularly the printing machines, both offset and flat-bed, but some is a mystery to me, like the one on the right.

Can any Sheetlines reader offer any further information about the location or the machinery?



Over-cooking lime kilns?

Paul Bishop

At the risk of over-doing the issue of mapping of lime kilns,¹ I note yet more variety in OS mapping of clamp kilns in Scotland. The first of the two previous *Sheetlines* pieces on mapping of lime kilns explained that clamp kilns – which exploit the simple technology of packing limestone and a fuel into a U-shaped embayment or pit and igniting and covering (clamping) this kiln charge to produce lime – were represented in OS First and Second Editions mapping in Scotland by a U shape, or an open-ended or closed rectangle. The simple U-shaped symbology has antecedence in Scotland back to at least 1796.² OS representation of lime draw kilns – the stone-built structure that probably comes to my mind when thinking about lime kilns – is more complex and varied, ranging from a ‘standard’ symbol of a circle with a dot on the circumference, to symbols that represent more closely the foot-print of the kiln and include wall shading to indicate the upstanding nature of the kiln.³

I have now come across on OS First Edition 25-inch mapping a similarly more detailed representation of a clamp kiln that goes beyond the simple U-shape or rectangular symbol (*figure 1*). This rather elegant symbol embodies more detailed representation of the footprint of the kiln and includes wall shading. I interpret the kilns’ keyhole plan-view form, observed in old clamp kilns at the Cults Limeworks in Fife (*figure 2*), as a later, more sophisticated kiln structure but the purpose(s) of the narrowing (‘waisting’) at about the middle of the kiln remains unclear.

In terms of OS mapping of the widely dispersed and important nineteenth century lime industry, this latest find of a new kiln mapping symbol increases the number of symbols that OS used and highlights the issue of the degree of standardisation of symbology in OS First Edition 25-inch mapping. Indeed, there are no other kilns on the 25-inch Lanark Sheet 6.2, nor on the corresponding six-inch map (Lanarkshire Sheet 6; surveyed 1858, published 1865), and it is possible that the surveyor devoted more time to the recording and representation of these two Stockingfield kilns than was possible or desirable when many kilns had to be mapped. In the Baldernock area, for example, about 5 miles (8 km) to the NNE of the Stockingfield kilns, OS 25-inch First Edition maps 42 clamp kilns using the simple U symbol whereas I have located more than double this number of clamp kilns (87) in the same area. Many of the unmapped kilns are immediately adjacent to, and no less visible than, mapped ones, and none of the latter appears ‘fresher’ or more distinctive, and hence more liable to be recorded, than those that were not mapped. I suppose that the surveyors or drafters used only the simpler symbol because of the number of clamp kilns to be mapped but why they chose

¹ Paul Bishop and Gavin Thomson, ‘How OS depicted limekilns in Scotland’s Central Belt’, *Sheetlines* 98, 19-31; Paul Bishop and David Munro, ‘Further comment on OS mapping of limekilns in Scotland’, *Sheetlines* 101, 42-47.

² Bishop and Munro, op. cit.

³ Bishop and Munro, op. cit.

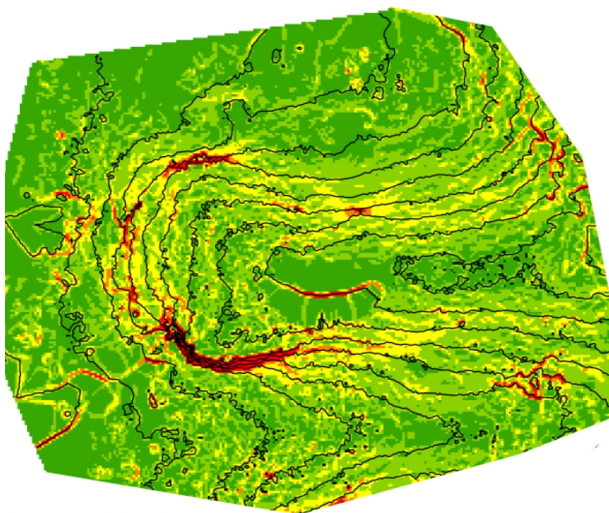
to record only about 50% of the Baldernock kilns is less clear. Overall, the main point to note is that OS First Edition mapping of both types of lime kilns used either a generic symbol (U or rectangle for clamp kilns; circle with circumferential dot for draw kilns) or a symbol that more closely recorded the kiln in plan-view (the kiln's 'footprint').



Figure 1.

OS First Edition 25-inch mapping of two lime kilns at Stockingfield on the Forth and Clyde Canal in Maryhill, Glasgow (Lanark Sheet 6.2 [Maryhill]; surveyed 1858; published 1865). The label is 'Old L. Kilns', and the canal is the water body at lower right. The First Edition six-inch mapping represents these kilns as a single closed rectangle labelled 'Old Limekiln'.

[extract reproduced by permission of National Library of Scotland]



Slope (Degrees)

<VALUE>

0 - 15

15.00000001 - 30

30.00000001 - 45

45.00000001 - 55

55.00000001 - 82.67408752

0 1 2 4 Meters

Figure 2.

A terrestrial laser scan of an old clamp kiln at the Cults Limeworks in Fife, Scotland, highlighting the kiln's 'keyhole' shape.

[From Oriol Ó Cathail, 'Quantification of degradation in historical lime burning clamp kilns', Thesis submitted in partial fulfilment of the degree of Master of Science in Geospatial and Mapping Science, University of Glasgow (2015), Figure 26. I thank Oriol for permission to use this figure]

The first waterproof OS map?

Rob Wheeler

I am grateful to Mr Turnbull of Spennymoor for photocopies of a quarter-inch map that belonged to his father. It is made up as 28 double-sided cards measuring about 12 inches by 9, which between them cover the whole of England and Wales. Each card is protected by plastic, in a manner akin to lamination, but the

edges are reinforced (or sealed) by machine-sewn cloth edging tape. Figure 1 (left) shows the corner of one of the cards. It will be apparent that the map is the OS quarter-inch current until about 1912 when it was superseded by the Large-Sheet series.¹

One of the cards provides a key (figures 2 and 3). Evidently this is a commercial product by the firm Jernoid, whose name appears at the bottom. South of Grimsby, the cards are based on the OS



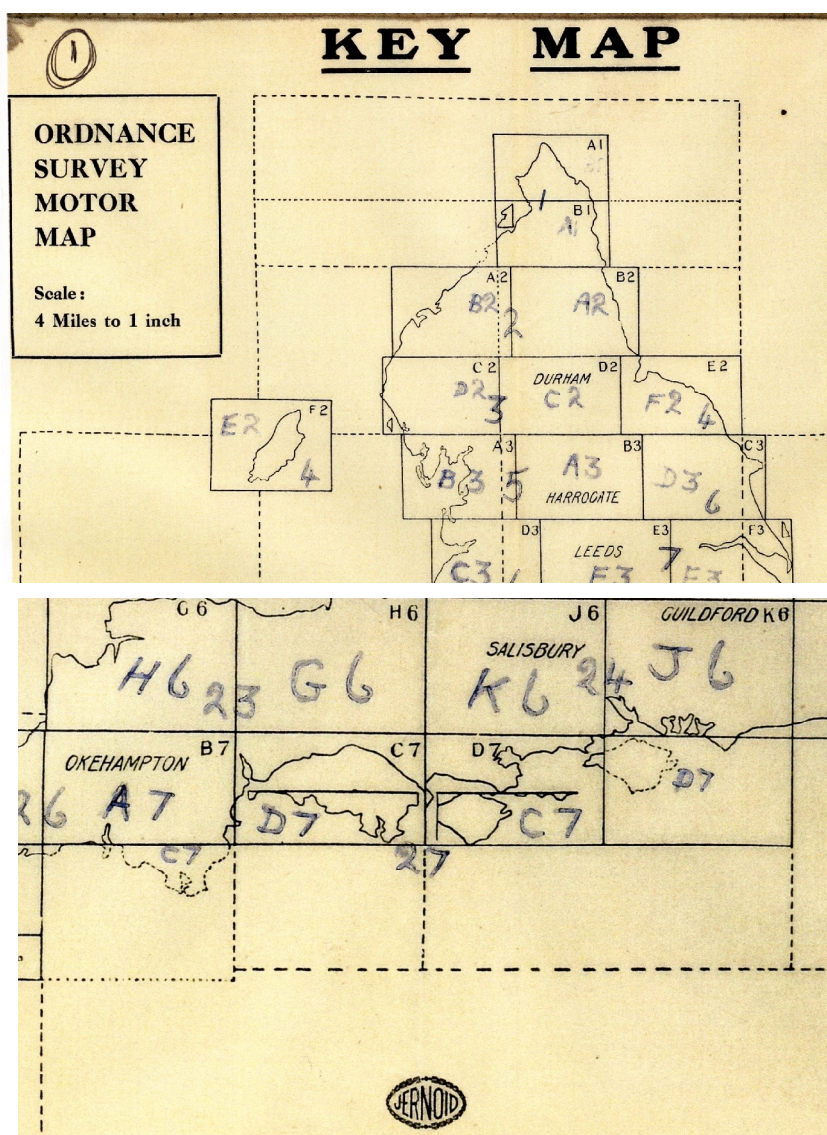
sheetlines, each sheet of 22.5 by 15 inches (excluding margins) being divided into four cards. North of this, some joggling has taken place to keep the number of cards to a minimum: the dashed vertical lines on the key indicate the division between OS sheets. Around the coast, nine pieces of land not thought to deserve their own card are placed as an insert on a different card. Thus, for example, the Isle of Wight appears as an insert under the Dorset coast (card D7). That sounds quite reasonable, but on close inspection one sees that the western tip of the island appears in its proper place rather than on the insert, whilst Selsey has been sundered from the rest of Sussex and appears on that same Isle of Wight insert. The reason for this brutal treatment is that the OS sheets have been cut up and the Isle of Wight (with Selsey) has been pasted on card D7: a literal cut-and-paste job. So Jernoid were *mounting* rather than reprinting OS material.

References to the firm are scanty. Jernoid Ltd were described in 1915 as show-card manufacturers of Western Road, Mitcham, Surrey; the company was wound

¹ See John Cruickshank, 'The Four Mile Map Before the First War', *Sheetlines* 14, 2-10.

up in 1920. What was a *show-card*? Phyllis Pearsall's book on Geographers' A-Z² may be helpful here. She describes the salesmen for the superior versions of the firm's maps as having sample sections made-up to fit in a poacher's pocket, so that they could be brought out with a flourish at the appropriate point in making a sale. That, I suspect, is the type of item Jernoid were in the business of producing, and what they did was to make up the OS quarter-inch (England & Wales only - their Key Map and title completely ignores Scotland and Ireland) as a series of show cards. They must have seen early motorists in open cars as an ideal market for a map that would survive use in the wind and rain.

What is the date of this product? The old quarter-inch sheets seem to have remained on sale well into the War, so the product could be as late as 1914. The



red-brown shading of the roads suggests these are later printings of the map rather than earlier.

One might expect Jernoid to have advertised their product. I have searched the British Newspaper Archive without success (apart from a food supplement of the same name, recommended for goslings!) but the motoring market was so small that it was probably best reached through specialised periodicals. Inspection of a run of *Autocar* for 1913 yielded a few map advertisements, mostly for Autocar's own ones. None of the OS marginalia survive. Nor is the provenance much help in determining date: Mr Turnbull's father was born too late to have bought the map new; as a second-hand map it could have come from anywhere. But at any rate this must pre-date Place's Waterproof Paper by at least fifteen years.

Figures 2 and 3, the top and bottom of the key

² P Pearsall, *From Bedsitter to Household Name*, 1990.

Boundaries and rivers

Paul Bishop's query in *Sheetlines* 102 (page 29) revolved around mismatches between National and Cassini grids and how might such be 'hidden' in rivers.

Firstly I am fairly certain that the wording 'when early OS mapping was recast onto the National Grid in the 1950s, problems of fit could be 'lost' in the rivers or lakes' should have 'lost' altered to 'found'.

What David Andrews had to say is correct (I can add six metres in Newhaven Harbour to his list) and the problem was by no means confined to county boundaries. Nor was the problem confined England, Scotland and Wales. In his book *If Maps Could Speak* Richard Kirwan ex-Assistant Director of Ordnance Survey Ireland mentions a two metre error coming to light in the River Blackwater bounding Counties Cork and Waterford.

This and many similar instances can be viewed online as OSI not only uploaded all the Republic's County series 1:2500 as a seamless map, but also the modern equivalents, though sadly they are not as detailed as hitherto.

In the majority of cases you get two boundaries depicted with a consequent error of two or even three metres, more often than not in waterways, but on land also. A quick switch to the modern map (usually 1:5000 enlargeable to the county series scale) reveals the waterway at about half the 1:2500 width.

Virtually all the 1940s and early 1950s work undertaken by Ordnance Survey in England was resurvey at 1:1250 so that the problem did not exist. But when overhaul of the 1:2500 map commenced in south Devon and east Cornwall circa 1949 there was the change of meridian in the River Tamar (south end) to contend with.

Just how difficult this was I cannot with accuracy say; one word-of-mouth told me it was horrendous. Yet looking at the one-inch map and the Historic Maps website I am not altogether clear where the difficulties were. The two Cornish towns Saltash and Torpoint were 'resurveyed' at 1:2500 with a considerable density of control points (not just trigs) whilst going northwards for the first five or six miles most of the land mass (on the 1km by 1km maps) was either in Devon and Cornwall with mud flats (at low tide) occupying the open sides of the maps.

The river narrows considerably as the village of Calstock is approached and at Gunnislake, four miles on, the boundary moved to Side of River, the whole being in Cornwall. At Inny Foot, nine miles further, it changed back to Centre of River whilst north of Launceston it looped twice into Cornwall and once into Devon for non-river alterations. It is believed that the southernmost and largest loop reverted to Centre of River in the mid 1960s; the other two still exist. At an unknown date between 1967 and 1984 the boundary seems to have been altered from Defaced in the reservoir of Lower Tamar Lake and moved, but remains Defaced in the later-constructed Upper Tamar Lake. I vaguely recall there was some dispute between Devon and Cornwall over this when OS sought agreement. The boundary then follows the Tamar virtually to its source before turning sharply westwards towards the sea at Marsland Mouth on the north coast.

Just how much more change of Meridian affecting rivers, lakes or other waterways OS had to cope with I couldn't say, but little was tackled before the 1960s. I personally had to restore a deleted stream carrying the Salop-Staffs boundary west of Wolverhampton around that time.

To study the Tamar throughout its length I used the excellent NLS Map Series site which has most of the County Series editions; a bewildering collection of filled and un-filled sheets, virtually all the latter being first editions of circa 1880s.

John Cole

Working at Ordnance Survey in the Nineteen-thirties

Alfred Buckle



These are extracts from transcripts of tapes recorded by Alfred Hilson Buckle in 1977, which have now been uploaded to a blog maintained by his grand-daughter Moira Grant.

Alfred Buckle was born in March 1911 in Scarborough and worked at Ordnance Survey from 1935 to 1938, when he left to join London County Council. He died in April 1989.

The manager of the Labour Exchange sent for me again. "I remember sending you to Jones and Rickabys. Would you like me to put your name down for the entrance examination for the Ordnance Survey? If you get a job there you will have a job all your life". In due course I went to York and took an examination. There were about twenty people there. Quite admirably up on surveying before I went. I knew a lot about

surveying. I passed the examination and, oddly enough, I was the only person out of the twenty who were present for the examination who did pass.

I left Jones and Rickabys, the architects, and started work for the Ordnance Survey in the first few months of 1935. This was quite a big change in luck as far as work was concerned. I wouldn't earn a lot of money with the OS but I would have a job for life. If I kept my nose clean I would have a pension when I finished working. So I went to London to work in the Ordnance Survey Office. This, I wasn't to realise it at the time, was to change my life completely because I was to learn about this new job, this surveying, which I was to carry on all of my life and which I am still doing at the age of 66. And this year, this particular year, 1935, I was to get married so my life was completely changed. At this time very few people from Scarborough went to work in London. When I went my friends said goodbye and it was as if they were sending me off to the frozen wastes of Antarctica or something like this.

I remember soon after I started with the OS a friend who was in the office came from Oxford. The pair of us tried to walk out into the country from where we lived in Fulham. We never did manage it. Quite depressing. Anyway, there I was at the OS. The first thing they did was to teach us all to draw. I thought I knew something about draughtsmanship beforehand but I knew nothing. The men, the young men who were in this intake, we were from all parts of the country. Young men who had been to these competitive examinations that had been held in towns and cities. I suppose I was very lucky to be selected because there were not so many. There were possibly about forty in all. There were fine young men. A lot, I should imagine, now dead. A lot were killed in the war, but there were

some fine young men. Very few you didn't like. We all had to start again and learn to draw again. All of us had experience as draughtsmen but we all had to learn to draw again. They first gave us all a lesson on the use and maintenance of the ruling pen. How to sharpen it, how to look after it. How to mix ink, what types of ink to use for winter and the summer. Then they started us drawing lines. They just gave us a chart to copy and I can't remember how many different thicknesses of lines but they appeared to be from about a sixteenth of an inch thick down to what you could almost see. You could hardly see a line was there. I remember at the time I thought, Oh my goodness I can never draw all these lines. But it was all a bit crafty. The object was not to teach you to be able to draw all these lines, which would never be used in any case, but to try to make you draw a good line of quite fine thickness and, in some cases, moderate thickness. The whole idea was to make sure you could use the ruling pen. So this went on. After about a fortnight we were put on copying odd bits of plans, large-scale plans. Bit by bit it was revealed to use why we were being employed at this particular place. It was carry out the enlargement of the Ordnance Survey 1:2500 scale maps to a scale of 1:1250, so that these maps could be used in connection with the compulsory land registration of Middlesex. What it meant was if anyone bought property inside the county of Middlesex the sale had to be registered with the Government land registration office. We had to enlarge the map of Middlesex up to this scale and the whole county was divided up into tiny little sections, and each section was one sheet of approximate foolscap size or memorial size which was intended to fit to a legal plan.

We also did quite a lot of work in connection with tithe redemption. This was all training and I enjoyed it. It was hard work but I enjoyed it. You had to stick at your drawing desk. There was no leaving it to talk to anybody. If you did this too often the principal in the drawing office would come along and ask you what you were doing. You had to ask permission to go to the toilet and if you were up there more than five minutes he would be up there to see where you were. We did a lot of overtime to get this job done. We earned some money and it was very useful because, in the first place, we were all there on probation, in spite of the fact we were hand-picked from throughout the country, and if we didn't reach the standard then they could finish us. I think this probation went on for about three months. The wage we got on probation was two pounds a week. Now, even in those days you couldn't live on two pounds a week in London. We all paid to lodge. We paid thirty shillings [$\pounds 1.50$] a week each. This was about the average cost of lodgings and this included breakfast and an evening meal. Nothing else. Baths were extra. Washing was extra. By the time you had paid your thirty shillings for this and you'd paid the odd coppers for travelling and the odd half pint of beer, you had nothing left. You couldn't save money to go home or anything like that. You had nothing left. It was hard and you were hungry. On Sundays instead of having an evening meal in the lodgings you had a meal at lunchtime. We had nothing more to eat. Nothing provided by the lodgings until the following morning when we had breakfast. We were so darned hungry we

used to go in the pubs at lunchtime before we had our meal and have half a pint of beer and fill our pockets with buckshee biscuits and cheese, which were always floating around in those days, so we could have something for tea. Anyway, after the end of the probation the wages were put up, but not by much. They were put up to possibly two pounds ten [£2.50].

Of course Janet and I had been living separately. She had been in Scarborough with her parents and I had been down there. I think she wanted to get away from home and I wanted her with me so we decided to get married. The outcome was that in June 1935 we got a special licence and we got married Whitsuntide weekend. Bit foolhardy. We hadn't a lot of money. Very low wage. The circumstance weren't good really but I was in love and there you are. I found an unfurnished flat and bought a few sticks of furniture on hire purchase and we had a few pounds which I spent on buying carpet and things like this and Janet came down to London. I suppose we were happy. We hadn't much. We lived on a very grubby street in a not very nice flat.

Learning to be a surveyor. The preliminary thing for this was to go down to Tunbridge Wells and find somewhere to live. What you used to do in those days, going to a new place with the OS, was you took the train and you also took a bicycle with you in the guards van. This was to give you mobility when you got there. I got the train to Tunbridge Wells [and eventually found a flat]. I went to the OS office, the training establishment in Tunbridge Wells. I made a bad start. I seem to always make bad starts and get the wrong side of people. I don't know why, I don't try to. I met the company sergeant major who was down there. They called him Rogers. I fell foul of him straight away and I told him what I thought. We had a few words and I remember when I went back to London I reported this to my seniors in the London Ordnance Survey office. I didn't know, but they had taken the matter up with the divisional officer, the officer in charge of the training school down in Tunbridge Wells and this Rogers, this company sergeant major, had a reprimand from his commanding officer. I didn't know this but when I got down there I very soon found it out because he really took it out on me. My first day there I understood he was looking for me. He said, "You were the bloke who complained about me, are you?" I said, "Yes". In no uncertain words he said, "Now watch out". The commanding officer was a bit of a lad. He was a bit of a disciplinarian, strict and rather underhand in his methods for inflicting his strictness. They called him Major Wills. He was one of the Wills tobacco people and there was no need for him to do this. There was no need for him to be in the army. There was no need for him to be a major, he had plenty of money but I suppose he needed to pass time.

One of the worst jobs I had all the time I was in the OS was just outside the borders of Buckinghamshire, almost in Northamptonshire. It was a brand new brickworks. An enormous place. London Brick Company Works. I would think it covered in all, with the clay pits, 150 to 200 acres. When we got there the section superintendent started doling out the work and he gave me some 1:2500 sheets to revise. "Here you are, Buck". Everyone used to call me Buck in those days. "Here

are some easy ones for you. Just for you". I was fine. I remember cycling out towards these fields. It is about seven miles from Buckingham and as I got closer I saw these huge chimneys begin to tower up into the sky. I thought, "These are nothing to do with me. Mine is just fields". As I got closer I began to feel uneasy. They were in the direction I was going and, my goodness, when I got there that was it. Brick kilns, huge quarries with miniature lakes in the bottom, overhead cableways, railway tracks, the lot. I'd really picked a 'beaut' and there was nothing to do but get tucked in and cope. The unfortunate thing about it was that by this time we had had an additional member to the section, a young man. His people had all been Ordnance Survey fellows. It had started with his grandfather, but this young man was different, he was interested in music. A very good pianist. Tall, slender, delicate young man. I got started on this business. It was clay pits and what-have-you. The section superintendent said, "I am sending so-and-so to help you. He can do some of the clay pits over the road away from the brickworks". It was possibly the worse clay pit of the lot. The one with the overhead cableways running right down into the bottom. The buckets picked up the clay and brought it up, over the road and into the brickworks proper. He said, "He will do those". I took this poor young fellow out with me and left him sitting by the side of the road looking down into this clay pit. I didn't see him do anything else. I went across once or twice to try to give him a hand but he wouldn't have it. He just couldn't cope, this young man. Sitting there. He very soon departed. A month and he had gone.

But before he left, we were in Maids Moreton in Buckinghamshire. There was a remarkable thing there. We were asked into a cottage. An old man at the door asked us what we were doing and said, "I remember when the soldier boys first surveyed this area. I've got a photograph of some of them on the wall. Some of them lodged with me". We went into this house and there was an old-fashioned, fading sepia photograph. A big photograph on the wall. There was a group of Royal Engineers in the old-fashioned uniforms and one of them was sat on a horse. He was a sergeant. And this sergeant on this horse was this young man's grandfather. This was a remarkable coincidence. I remember how moved the boy was. However it didn't move him sufficiently to do his clay pit. I got it done in the end. It took fifty-six days and there was only about two sorts of weather there, two sorts of conditions. It was either warm and very, very dusty and dirty or it was wet and very, very muddy. There was nowhere in-between. I suppose I got some reward because we were honoured by a visit from the divisional officer. The Ordnance Survey divisional officer. This was the head man in the area in which we were working and he complimented me on my effort. So possibly this was some small recompense. I was getting a bit fed up, a bit fed up.

To read more of Alfred Buckle's memories on Moira Grant's blog, contact her at grantmoira@hotmail.com



V A L E
OF
WHITE HORSE

Stanford's Hunting Populars

Rob Wheeler

Tom O'Loughlin wrote about the difficulty of reading a map while driving.¹ Reading a map while riding a horse must surely present even greater problems.² The needs of the hunting fraternity were particularly acute. I am not suggesting that anyone would wish to consult a map while taking a fence: pursuit of a quarry was a communal activity, under the direction of a Master of Foxhounds who was expected to have an almost encyclopaedic knowledge of his hunt's area. But in this very pursuit, mishaps might often occur which could leave a rider isolated, often wet and bedraggled, and keen to make his way home in a sedate manner.

Those who regularly joined their local hunt and never ventured far afield would generally have a good knowledge of the area and would not need a map. Others liked variety and were active with multiple hunts. They may well have lost track of where they had got to, so had the initial problem of establishing their location before plotting a route back to the friend's house, or wherever, for this day, constituted 'home'. Such a man could of course always seek guidance from the local population. This was a favourite situation for the artists of hunting prints; to judge by their productions the response was likely to be unhelpful. Thus a map would be desirable. Ideally it should facilitate viewing without dismounting, and with gloved hands, one of which should be holding the reins. It needed to show every lane and bridle path and to cover the entire area of a hunt on one sheet. The Ordnance Survey one-inch was the obvious candidate, but the folding arrangement, pre-Bender, was unsatisfactory. So Messrs Stanford & Co stepped into the breach, with the Stanford-Bridges patent mounting, as advertised in *Baily's Hunting Directory*, 1930-31 (*below*).

"Stanford-Bridges" Method of Map Mounting

Especially suitable for Hunt, Motoring and Touring Maps or generally for Maps used in the open air. The inconvenience experienced in handling a map in the wind is banished for ever. Adaptable to any map on any scale. This patent Mounting (of which EDWARD STANFORD, LTD., hold the sole rights) is a method by which maps can be mounted to fold so as to enable them to be turned over equally well from North to South or East to West, without more than two sections of the map being open at one time. The cost is only slightly in excess of that for ordinary mounting.

The specimen illustrated here is based on Popular (E&W) sheet 104 but with parts of 93, 103 and 112. A simple border has been pasted round the edge, but it is indented to exclude the bottom left and top left corners; this was done in order to avoid including small portions of sheets 92 and 111. The overall map is mounted in three double-columns, each nine inches wide. Each double column

¹ 'The 'Auto-Mapic' Map of Great Britain', *Sheetlines* 104, 30.

² The author cannot claim any practical experience of this and has no intention of engaging in experiments.

carries three flaps, so that any one of four possible views can be presented, each a little over seven inches high, which together cover the full north-south extent of the column. Thus when moving across the northern or southern edge of one's chosen view, a flap can be turned to continue to the next view. When moving across the east or west edge, one turns a page, as though the map were a book. In this case, it is necessary to ensure that the flap selected on the new column is the same as that selected on the existing one. The bottom and top borders make the S and N views within a column easily recognisable, but the two middle ones might be confused; to prevent this, red arrows have been drawn on the northernmost of the two middle views. The thickness of the flaps makes it possible to perform this manipulation with gloved hands; when no manipulation is required, the map can be held like a small-format book, kept half-open with the thumb bottom-centre.

Sheets 93 and 104 have their minor railway stations filled in red so are of the 1921 state or later. Sheets 103 and 112 have unfilled stations so, if the sheets used were current states when the map was made up, it cannot be later than 1927.³ The map is provided with covers of stout board, covered with red cloth; the front is embossed in gold 'Vale of White Horse'.

I had presumed this to be a hunt map when I first acquired it, but had been perplexed to find that the map showed two adjacent districts, each marked with red boundaries. The answer, I learn from Baily's,⁴ is that the Vale of White Horse district had been split, with one hunt based on Swindon and another on Cricklade; both continued to use the White Horse name.



³ Yolande Hodson, *Popular Maps*, The Charles Close Society, 1999.

⁴ Baily's Directory is worth perusing for other things as well. The Fish Biscuit Company of Grimsby advertised Garthwaite's Fish Biscuits; reconstituted fish scraps seems an odd diet for foxhounds, but presumably they made the prospect of fresh fox seem a real delicacy.

Re-drawing of OS First Edition 1:2500 sheets for a later First Edition printing

Richard Oliver and Paul Bishop

Bishop's recent investigation of the reliability of OS mapping of buildings' internal divisions and building sizes¹ highlighted, following a well-placed query from Rob Wheeler before that piece went to press, that the first and later printings of OS First Edition 1:2500 ('25-inch') mapping are different in several important aspects. One of the obvious changes between the first and later printings of the First Edition maps of Scotland that were examined is that the mapping and first printing of the 25-inch maps were by parish, with those areas on a map sheet outside that parish being left blank, whereas after c.1880 printings were of sheets 'filled in' to the neat line. But there were other, perhaps more subtle changes between the first and later printings, examples of which are given below before the reasons for the changes are described.

This matter of the First Edition 1:2500 being observably changed on reprint is something that has been well known to some for at least 30 years, but it does not seem to have been remarked on in print (hence this note). At one time, Alan Godfrey used to give talks on OS large-scale maps, before the business of reprinting them ate up all his time and energies, and he used to draw attention to this matter: it is found on both the 1:2500 and those urban 1:500s that were produced by zincography rather than engraving.

The reason for these differences lies in the production method for the 1:2500, at any rate for those sheets first published up to *circa* 1888 using zincography.² Once field examination was completed a manuscript 'fair plan' was drawn, which served as the original 'record'. In order to publish the mapping a tracing of the fair plan was made in greasy lithographic ink; the tracing was then laid down on a grained zinc plate. The plate was inked up and passed through a press enough times to yield the requisite number of copies; after that the usual procedure was to clean off the plate, and reuse it. This had the advantage that only a limited number of zinc plates were needed, but the disadvantage that, when a reprint was needed, new stock had to be supplied by repeating the trace-and-transfer method; thus there was scope both for small differences that do not affect the message of the map, for example the thickness of lines and the positioning of text, and for changes that do affect the topographic content. There is strong evidence that the plates for 'heavy' sheets, which were largely or wholly of built-up areas, were, at any rate by the late 1880s, stored against reprinting, rather than

¹ 'The internal divisions and size of mapped buildings', *Sheetlines* 105, 27.

² The earliest 1:2500 sheets, of 1855-6, were printed by lithography (printing from stone); zincography seems to have been substituted very quickly. In any case, the basic procedure described here was the same regardless of whether lithography or zincography was employed. A few 1:2500 first edition sheets were engraved, notably those for Glasgow and London, and some of the printings of these engraved sheets were via transfers to zinc rather than direct from the copper, but these zinc printings reproduce the engraving, and do not involve any redrawing – or re-engraving.

cleaned off: Devon sheet 80.6, issued by Alan Godfrey, appears to be a clear example of this.

Examples of changes

Bishop has investigated two later printings of First Edition 25-inch sheets – Stirlingshire sheets 32.2 and 27.15 – which were both ‘Zincographed and Published at the Ordnance Survey Office, Southampton 1893’. Both sheets have survey dates at the bottom left-hand corner, 1859 & 1860 and 1860 respectively. Stirlingshire sheet 32.2, which covers the built-up area of the town of Milngavie is also annotated in the bottom left-hand corner margin thus: “Railway inserted in 1868”. A range of changes have been introduced in re-drawing the sheets for the later printing, from the merely ‘cosmetic’ (changes in symbology) to the more substantive; figure 1 gives examples of the latter, including changes in road layout and changes to a building’s footprint. It is clear from figure 1 that the detail (and in places the number) of symbols for trees/vegetation are changed in the re-drawing. In figure 2 are given examples of other changes in vegetation.

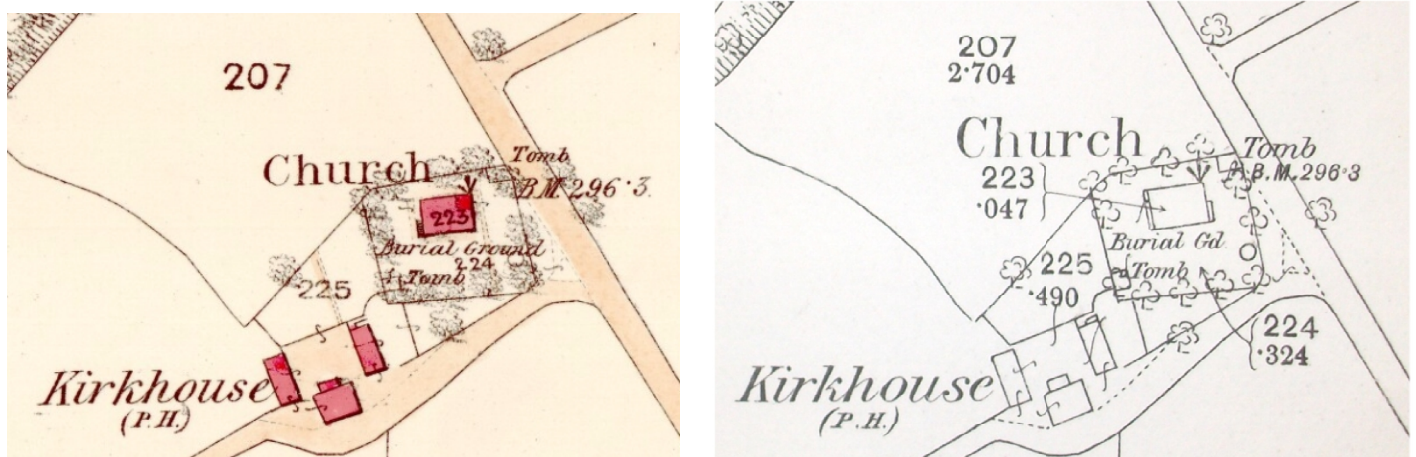


Figure 1a (left) First printing and figure 1b (right) later (1893) printing of First Edition 25-inch representations of the Baldernock Parish Church (Stirlingshire sheet 32.2). Note the following: the land parcel numbers are identical but some parcel numbers have been moved for the late printing, which also now includes each parcel's area (in Imperial acres); the changes in lettering styles between the two printings and slight changes in the positioning of labels (eg the word “Church”); small but not insignificant differences in the footprint of the church between the two printings; the lack of wall shading on buildings in the late printing; the latter's greater detail of the road lay-out at the south-eastern corner of the Burial Ground; removal on the later printing of the narrow track behind the Kirkhouse; and changes in the tree symbols.

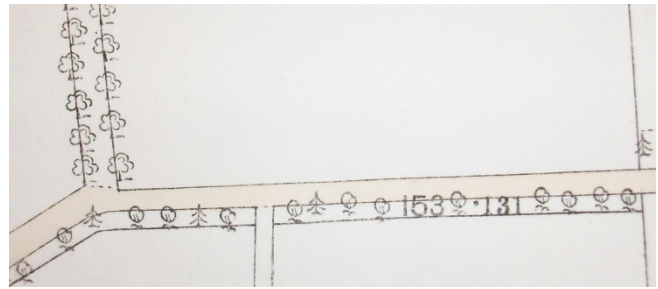
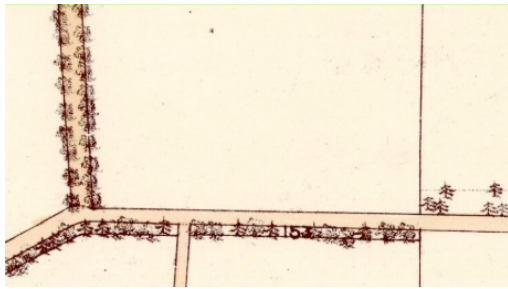


Figure 2a (Left) First printing, and figure 2b (right) later printing of First Edition 25-inch representations of vegetation on Stirlingshire sheet 27.15. Note how the symbols are broadly similar, distinguishing broadleaf trees from conifers, but the number and placement of the symbols in detail vary between the two printings.

Similar examples of changes can be seen in comparing the Crystal Palace sheet of 1864, reissued in a restricted edition by the Charles Close Society in 2010, with Kent sheet 7.10, in a printing of 1895 issued by Alan Godfrey in 1988.

Sources for First Edition 1:2500s

The number of surviving exemplars of 1:2500 First Edition mapping is limited, and the survivors fall into three groups:

First are the initial printings, which were sent to some legal deposit ('copyright') libraries, and of which copies may be encountered in other collections;³ these will be by parishes where publication was in this form, as it was in England and Wales up to *circa* 1870 and in Scotland up to the completion of the initial publication of the 1:2500 *circa* 1880.⁴

Second are the 'reprints' produced as necessary to replenish stock; comparatively few of these are known to survive, and such as do will be found in various local or private collections. It is quite unclear at present how extensive such reprinting was.

Third are the 'Record Maps'. In origin these are simply the final printings of each First Edition sheet, and may be either the initial printing, where stocks were adequate, or second or subsequent printings. These 'Record Maps' were effectively unsold stock after the first revision ('Second Edition') sheets were published, from about 1894 onwards; they were retained by the OS as 'superseded editions' for sale to the public, and were the basis of the OS's Record

³ The British Library and, it is believed, the Bodleian Library, took every sheet that was published; the National Library of Scotland took only Scottish sheets, and Cambridge University Library took only Cambridgeshire sheets. Trinity College Dublin holds some early 1:2500s that were presumably sent under legal deposit, but we do not know how extensive its holdings of non-Irish 1:2500s are.

⁴ Publication of the 1:2500 falls into two: that in 1855-89 of counties either not hitherto mapped at larger than one-inch or not mapped at all, and that in 1888-96 of counties originally surveyed between 1841 and 1855 at the six-inch scale. Most or all of the 1:2500 publication of the 'six-inch' counties used photozincography or heliozincography, which did not entail the trace-and-transfer method.

Map Library.⁵ The two main sources of 1:2500 record sheets are Cambridge University Library, which was the recipient of many of the Record Map Library copies, and the National Library of Scotland, which acquired its set as a consequence of the OS disposing of its 'record map sales stock' in the late 1960s. Other 'record map' 1:2500s may be encountered in county record offices and other local collections.

Many of the 1:2500 sheets that have been reissued by Alan Godfrey since 1981 have been taken from 'Record Map' copies, and whilst most of the Godfrey Edition issues are of Second Edition or later sheets, a number are from First Edition sheets, and several of those are of 'record copy' final printings; a selection is listed in the Appendix. There are changes both to marginalia and to the actual content on the map face. It should be noted that all these sheets are on the edge of the then built-up area of London, and may not be wholly typical.

Actual revision on the ground of First Edition 1:2500 mapping was exceptional. Some is known on the south side of London, and is apparent in comparing the Crystal Palace sheet of 1864 with the 1895 printing of Kent 7.10. There was some addition of railways up to about 1872, and this may be indicated by a 'Railways inserted' note; it is not known what the procedure was, and whether the insertion involved revising the original 'fair plan'.

Changes to marginalia

The following have been noted on the maps used for the Godfreys, but are not exhaustive. The Appendix at the end gives the 'raw data', and indicates that detailed treatment can vary between printings of apparently similar date. It is to be noted that pre-1871 'parish' sheets lacked all marginalia other than parish name, sheet number and scale bars.

Survey, etc, date: From about 1871 this was included in a publication statement bottom centre; by 1880 it was in a separate note placed bottom left. This is occasionally supplemented by a note of revision or by a railway insertion note, as noted above for the Stirlingshire sheet 32.2. It should be noted that up to 1888 the date of 'survey' was actually that when the fair plan was certified as fit for publication, and that this may be a year or so later than the latest visit to the ground.

Publication date: This was only routinely included on zincographed map sheets from about 1879 onwards. Up to 1887 there was a two-line note, with 'Zincographed and published...' in italic and the publication date in sans-serif 'Egyptian' on a separate line below: this style is seen on Kent 15.2. From about 1887 onwards (the division may not be clear-cut) the date was included, in italic, at the end of the 'Zincographed...' statement (as is seen on the Stirlingshire sheets examined above, both published in 1893). It follows from this that an 'italic date' such as '1879' on Kent 8.5 is a post-1887 addition. The '1874' publication date on Kent 10.7 is in post-1887 style and seems suspect anyway in view of the

⁵ Or at any rate the Record Map Library as it was from the 1950s through to its dispersal in 2009; it is unclear what may have been lost by enemy action in 1940. The story is probably much less straightforward than as given here.

publication history of the constituent parish parts, but it might possibly record that the sheet was first printed in ‘filled’ form in 1874.

Reprint date: it is unclear when this was introduced: note that Kent 8.8 was ‘Re-printed in 1895’, Kent 7.10 was ‘Reprinted in 1895’, and Kent 2.15 is ‘Re-print 20/95’: study of a wider selection of sheets might help determine whether this is inconsistency, or reflects frequent changes in instructions as to wording. It remains to be determined how reliable the use of ‘reprint’ is in indicating whether a zinc plate had been stored, rather than cleaned off.

Boundary legend: An explanation of ‘Characteristics and symbols for boundaries &c’ was added to some reprints from the early 1890s onwards: it was produced by transferring from a copper engraved original, and seems to have been added to some plates that had been stored, as well as to newly-created plates.

Edition heading: A heading, approximately top centre, in the style ‘FIRST EDITION 18__’ was introduced in about 1894 or 1895, probably simultaneously with publication of the first 1:2500 ‘Second Edition’ sheets. The 1903 printing of Devon 80.6 indicates that the heading might be added onto an ‘original’ plate that had been stored.

Changes on the face of the map

Acreages: Originally acreages for the 1:2500 were published in separate books;⁶ from 1884 the books gradually fell out of use with the acreages being included on the face of the maps (eg figure 1b). Most of the post-1884 First Edition printings in the Godfrey Edition include the acreages on the map face. It is unclear whether this reflects general practice, or whether it reflects stocks of area books or size of parish or treatment of adjoining sheets, or some other consideration; note that Kent 15.2, printed in 1886, lacks acreages. It is unclear as yet whether the acreages were stamped or otherwise transferred onto the plate, or whether their presence indicates a complete retransfer.

Altitudes: The practice up to the early 1890s was for the values to be written in a similar italic to other text on the map face; bench-marks were indicated by an arrow, and spot-heights by a dot (see figure 1a). From the early 1890s values were stamped, in sans-serif ‘italic Egyptian’, and spot-heights were indicated by a ‘plus-sign’ which, as it varies in size between individual sheets, was presumably drawn rather than stamped (see figure 1b). The retention of the older style, for example on Devon 80.6 printed in 1903 (Exeter city; reissued by Alan Godfrey), can be an indicator of a plate that was stored, rather than re-traced and re-transferred.

Minor detail: A review of OS work by the Office of Works in 1870-1 criticised minor details such as paths in gardens, and by the mid 1870s the garden paths and rails under roofed areas (as at Crystal Palace [low level] Station on Kent 7.10), and possibly other details, were being omitted from new publications; the evidence of Stirlingshire 32.2 (figure 1) and of the sheets in the Appendix below

⁶ Richard Oliver, *Ordnance Survey Maps: a concise guide for historians*, Charles Close Society, 2013, 58.

is that by the mid 1880s such details were also being omitted from reprints. It is for investigation whether they were omitted from reprints from the same time as they were excluded from new publications. The treatment of hedgerow timber, drawn attention to in figure 2, needs further investigation.

Stamped text: Up to the late 1880s most text on 1:2500 mapping seems to have been either stencilled or, for smaller lettering, penned freehand; thereafter stamped lettering was used on new publications, and it is also known on some 1:2500 reprints – a sure indication of ‘re-transfer’. A relatively ‘high profile’ example is the extract from Wiltshire 48.8 in the ‘Seymour history’, which purports to be 1880.⁷

Appendix

A selection of ‘record copy’ final printings.

Kent

2.15 – ‘FIRST EDITION 1865’; ‘Zincographed and Published ... 1875’; ‘Surveyed in 1862’, ‘Re-print 20/95’; parts of 3 parishes; with acreages; ; sans-serif altitudes, marked by +. Heading and imprint style are mid-1890s; drawing style is more 1880s; boundary legend. Date in heading is consistent with original publication of consistent parishes.

3.19 – No heading; ‘Zincographed and Published ... 1885’; ‘Surveyed in 1862, 1863 & 1864’, ‘Reprinted in 1893’. 1 parish in Kent; also includes part of Essex; with acreages. Imprint style is mid-1890s; drawing style is a little ‘rough’ for mid 1880s.

7.4 – No heading; ‘Zincographed and Published ... 1879’; ‘Surveyed in 1863 & 1867’, ‘New railways inserted in 1870’, ‘Re-zincographed and printed in 1885’, ‘Reprinted in 1889-93’; parts of 5 parishes; parcel numbers only. Imprint style and drawing style are mid 1880s.

7.10 – No heading; ‘Zincographed and Published’, no date; ‘Surveyed in 1861, 62, 63 & 70. Revised in 1868 & 70.’; ‘New Railway inserted in 1871. Published in 1879.’ ‘Reprinted in 1895’; parts of 5 parishes, in 2 counties; with acreages; sans-serif altitudes, marked by +. Imprint style is mid-1890s; drawing style is 1880s. Boundary legend. Crystal Palace [low level] Station is depicted with overall roof, and rails and other details under the roofed area are not shown – unlike the original version, as exemplified by the 1864 *Plan of the Crystal Palace and its environs*, reissued by the Charles Close Society in 2010.

7.14 – No heading; ‘Zincographed and Published ... 1888’; ‘Surveyed in 1861 & 1862’, ‘Revised in 1868’, ‘Reprinted in 1891’; parts of 3 parishes, in 2 counties; with acreages. Imprint and drawing style are consistent with 1888.

7.15 – No heading; ‘Zincographed and Published’, no date; ‘Surveyed in 1861, Published in 1883’, ‘New Railways inserted in 1871, Reprinted in 1894’; parts of 2 parishes in 2 counties; with acreages; sans-serif altitudes, marked by +. Drawing style is consistent with 1883; imprint style is mid 1890s. Boundary legend.

⁷ WA Seymour (ed), *A history of the Ordnance Survey*, Folkestone: Dawson, 1980, plate 12: only the lack of hand-colour and the hedgerow trees differ from the ‘Second Edition’ style.

7.16 – No heading; ‘Zincographed and Published ... 1863’; ‘Surveyed in 1861’, ‘Re-zincographed and printed in 1893’, ‘Re-printed in 1895’; parts of 3 parishes; with acreages; sans-serif altitudes, marked by +. Drawing style and imprint seem more characteristic of 1880s than 1890s, and the style of depicting altitudes seems decidedly anachronistic.

8.4 – No heading; ‘Zincographed and Published ... 1883’; ‘Surveyed in 1862’, ‘Re-zincographed and printed in 1893’; parts of 2 parishes; with acreages; sans-serif altitudes, marked by +. Drawing style is consistent with 1883; imprint style is later.

8.5 – ‘FIRST EDITION 1864’; ‘Zincographed and Published ... 1879’; ‘Surveyed in 1861’, ‘Reprint 20/96’; parts of 3 parishes; with acreages; sans-serif altitudes, marked by +. Drawing style and imprint are consistent with late 1880s or 1890s; date in heading is consistent with original publication of consistent parishes. Boundary legend.

8.8 – No heading; ‘Zincographed and Published’, no date; ‘Surveyed in 1862 & 1867. Railway inserted in 1870. Published in 1883’; ‘Re-printed in 1895’; parts of 2 parishes; with acreages; sans-serif altitudes, marked by +. Drawing style is consistent with 1883; imprint style is later. Boundary legend.

10.7 – ‘FIRST EDITION 1874’; ‘Zincographed and Published ... 1874’; ‘Surveyed in 1865’, ‘Reprint 20/97’; parts of 4 parishes; with acreages. Drawing and imprint style are *circa* 1879-84; includes contours; original publication 1863-7.

15.2 – No heading; ‘Zincographed and Published ... 1886’; ‘Surveyed in 1861’, ‘Revised in 1868 & 1869’; parts of 2 parishes in 2 counties; no acreages. Drawing style and imprint are consistent with 1886. Norwood Junction station is depicted with overall roof, and rails under the roofed area are not shown.

Middlesex

7.10 [issued as ‘Winchmore Hill in 1865’ by Southgate Civic Trust, 1987] – No heading; ‘Zincographed and Published’, no date; ‘Surveyed in 1865. Published in 1882’; ‘Reprinted in 1894’; all 1 parish; with acreages. Drawing style may be possible for 1882, but imprint style is mid 1890s; boundary legend; includes contours.

16.9 [‘London 57’ in Godfrey Edition] – No heading; ‘Zincographed and Published ... 1874’; ‘Surveyed in 1864’, ‘Re-zincographed & printed in 1891’; parts of 2 parishes; with acreages; sans-serif altitudes, marked by +. Drawing style and imprint are consistent with 1891.

C roads in Kesteven

Ray Carroll



Road number C326 on fingerpost at Caythorpe, in what is now South Kesteven District, Lincs

I would like to add to the piece by Rob Wheeler about the Kesteven atlas with reference to C and D road classifications.¹

Rob mentioned Richard Oliver's article of 2000 ² which included photographs of two road signs with C-class roads and I have a picture of another example. I wrote in an article in 2011³ that I had been intrigued to find out more about how and when these three examples had been put up and whether there might be others.

To that end I went back to the minutes of the relevant committees of the three county divisions of Lincolnshire – Lindsey, Kesteven and Holland – since the three examples were all sited in Holland County. I was unaware then of such indicators anywhere in the county nor, for that matter, anywhere else though I knew some rare cases had been noted elsewhere. I read the documents from 1914-5, when the first ideas were mooted for a national road numbering system, as far as the 1960s, which I thought was the likely cut-off date.

Although A and B numbers were first introduced in 1923 most authorities seem to have referred to class I and II roads. However, at its meeting on 2 July 1924, Holland County Council Roads and Bridges committee, in scheduling which

¹ Rob Wheeler, 'A Kesteven road atlas', *Sheetlines* 104, 35.

² Richard Oliver, 'C roads on signposts and maps'. *Sheetlines*, 59, 40 (available at <https://www.charlesclosesociety.org/SheetlinesArchive>)

³ Ray Carroll, 'Lincolnshire roads', *Lincolnshire Past & Present*, 85, 16-22 (Autumn, 2011).

roads were to be tarred that year, included three roads with C numbers. In following years there was no consistency of reference, with A, B, C, class I and class II all being used. By 1953 I had found references to C1, C3, C6-14 and C23-24. The final list up to 1974 had numbers as high as C132. Nothing in the records showed, however, when the placing of the signposts was authorised but the presence of the HCC roundel shows that they predated the Local Government Reorganisation Act of 1974.

In the case of Lindsey they may have adopted as many as six categories of road classification, as shown on a map of 1940.⁴ They did not appear to use letters but a numbering system up to three digits long. However, there were a number of examples of C numbers appearing on pre-1974 road signs, now, it seems, all removed.

Kesteven, as Rob shows, adopted its own version for its four road subdivisions, eg N8 (ie North Division, road 8). Later these numbers included C, eg EC8 (East Division, road C8). Well behind Holland in its usage, it was only at Kesteven Roads and Bridges committee meeting of 19 January 1933 that two categories of unclassified roads are mentioned (though they were not then called C or D); the meeting of 25 June 1935 is the first time that such designations were used. At that same meeting I found the only case of a D number being recorded – ED South Kyme 12 foot drove (TF 174497). All this suggests that Rob's atlas numbering could have been begun before his suggested date of 1937 but not more than two years earlier.

Ironically, the only example I know of a C number appearing on a modern signpost in Lincolnshire is in Kesteven at Caythorpe (SK 937486), shown above, but the number is one of the three digit type allocated by the present county set-up adapting and extending the former Lindsey scheme.

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As mentioned on page 1, scans of Old Series sheets 1 to 90 will soon be available on the website. Meanwhile, don't forget that over 200 images of rare and unusual Ordnance Survey maps are fully described and viewable at www.charlesclosesociety.org/digital

⁴ Lincolnshire Archives Office, Chat 6/3.

What they had for lunch in 1956

Richard Oliver

In view of the remarks that are sometimes made as to the excellence or otherwise of the value for money for luncheons provided at Annual General Meetings of the Charles Close Society, it is of interest to learn what was paid for a buffet meal and tea sixty years ago.

On 7 February 1956 a meeting was held in Edinburgh between the Ordnance Survey and various interested parties to discuss the extent of basic-scales cover in Scotland. For some time past the policy had been that the most remote Highland areas, hitherto mapped at 1:10,560, would be remapped in the National Grid series only at 1:25,000 (*figure 1*).¹ The outcome of the conference was that the six-inch scale would be retained, and it was the 1:25,000 whose future was more doubtful.²

The conference was an ‘all-day’ one, and it was scarcely to be expected that the OS Director-General, Major-General JCT Willis, and the other distinguished attenders could go without lunch, and a quotation was accepted from Messrs Harwell, Bridge Road, Colinton, Edinburgh 13, for a buffet lunch (12.45pm) at 7s (£0.35) per head.³ Specified in the quote were (in order): coffee, tomato soup, rolls with gammon and roast beef, tongue, salad, cheese sandwiches, hot sausage rolls and pie, cut cake and biscuits. 9d (£0.035) was quoted for tea and biscuits (3.30pm).

Using the Bank of England’s inflation calculator, £0.35 in 1956 is equivalent to about £8.05 in 2016.⁴ However, my instinct in terms of prices relative to the expectations most of us have of our incomes is that a multiplication of around 40 would be more appropriate. For comparison, a paper-folded one-inch Seventh Series sheet in 1956 cost 4s (£0.20) for 1800 sq km of mapping, which translates into about £4.60 today; the 2016 equivalent, the 1:50,000 *Landranger*, costs £7.99 per sheet for 1600 sq km of mapping.

An Ordnance Survey file is not perhaps the first place one would think of looking when researching the menus and prices for buffet lunches, whether ‘then’ or ‘now’: perhaps those of us who groan as we work our way through masses of statutorily preserved and protected minutiae ought to be grateful for the occasional crumb.⁵

¹ The extent of these areas is indicated in *The Ordnance Survey Annual Report 1954-5*, London: HMSO, 1955, Plate I.

² The report of the conference is item 59A The National Archives (TNA), OS 1/798, and the situation is neatly summarised in W.A. Seymour, *A history of the Ordnance Survey*, Folkestone: Dawson, 1980, 300.

³ The quotation is at 46A in TNA OS 1/798.

⁴ <http://www.bankofengland.co.uk/education/Pages/resources/inflationtools/calculator>: this says that £1.00 in 1956 was the equivalent of £22.51 in 2015. I have rounded this up to £23.00 to bring things into 2016.

⁵ A nugget would be very damaging to the teeth – even for those fortunate enough to have a NHS dentist. Potential groaners are asked to note that groaning aloud is not permitted in the

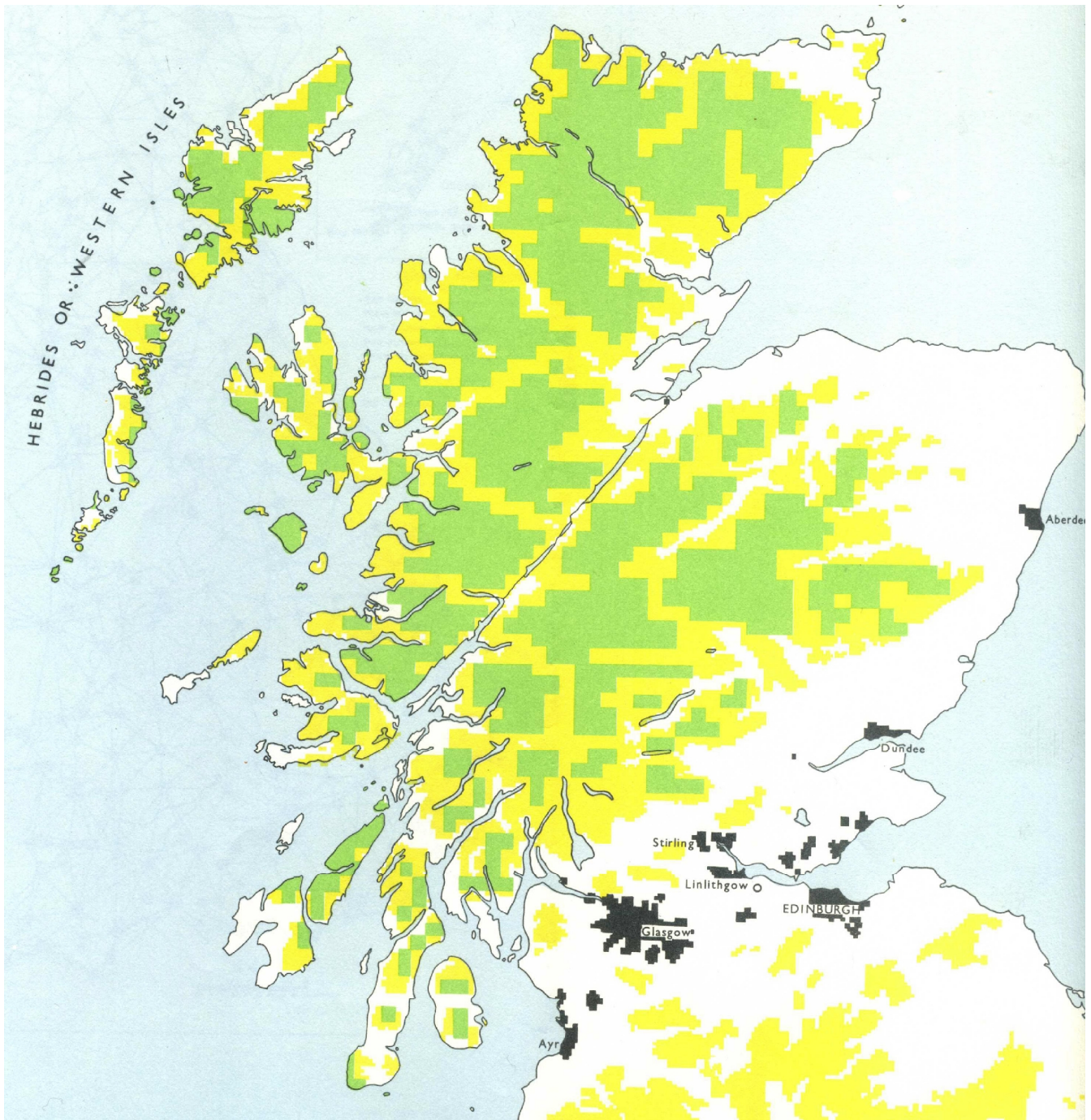


Figure 1: The areas coloured green on this extract from Plate I in The Ordnance Survey Annual Report 1954-55 are those which, up to early 1956, it was proposed would be remapped only at 1:25,000; yellow areas would continue to be mapped at 1:10,560. No green areas are shown outside the area of the extract. In the corresponding plate in the Report for 1955-6 all the formerly green areas are yellow.

'quiet area' at TNA favoured by the writer, and he doubts that groaning elsewhere in the public areas is acceptable, either.

Book Review

***Huw Dylan, Defence Intelligence and the Cold War, OUP, 2014,
ISBN 978-0-19-965702-5, hardback, £60.***

This may seem a curious book to review in *Sheetlines*, but, as the book's subtitle explains, it is actually about a specific institution, the Joint Intelligence Bureau (JIB). This was set up in 1946 to handle aspects of intelligence of interest across government: to the Foreign Office as well as the three Service Departments. Topographical intelligence was specifically included in its remit. It absorbed the Inter-Service Topographical Department, which had operated during the war from the Oxford School of Geography. And its remit included providing Service and Civil Defence planning staffs with information on the United Kingdom. So the reader might expect it to produce topographical maps, and to express a view on the specifications for Ordnance Survey maps.

The author faced a problem, that much material relating to the JIB has not been preserved and quite a lot that still exists has not been released. Yet, despite devoting a whole chapter to 'Mapping the Enemy' he mentions not a single instance of a topographical map produced by the JIB, though he observes that it did maintain a map library. Nor is there any indication that it pressed the OS to collect the sort of information on bridges, for example, that one finds on the contemporary New Zealand one-inch. Nor even is there any sign that it tried to direct the work of the single-Service mapping and charting agencies. The chapter on mapping explains the importance of German air photographs (known as 'GX') for the understanding of Soviet topography and then goes on to look at the JIB's role in analysing target systems – for example, estimating the quantity of freight that could be moved by certain railways. The analysis and documentation of potential targets takes up the second half of the chapter.

So, why no maps? One possible explanation is that the author, who is evidently anxious to show that the object of his research produced work that affected major government decisions, has ignored these as unworthy of attention. Or, perhaps more probably, General Strong, as the Head of JIB throughout its life, focused the work of the Bureau on high-value products; and maps were seen as of less importance in the nuclear age. The question remains an open one.

Thus, while the book ought to be read by anyone interested in the history of post-war British topographical mapping of foreign countries, it fails to provide positive information on it. Paradoxically, compared to recent histories of MI5 and MI6, the author has struggled to find much material, and pads out what he has found by repetition. It is an important book but hardly a pleasurable read.

Rob Wheeler

50th Kerry musings

David Archer

When did you last close your eyes and feel your maps? By which I mean, give them a really good going over, as my Mother does presents on Christmas Eve, using her fingers to extract as much information as possible, without actually seeing the gifts? At the 1998 weekend meeting in Harrogate, Peter Stubbs provided the Saturday evening relaxation entitled 'Blind Map's Buff', with a pile of sealed envelopes, each containing an Ordnance Survey map folded into covers. After one of us was blindfolded, Peter would open an envelope, produce a map, show it to the sighted and hand it to the contestant who was expected to identify the item without seeing it. It worked exceedingly well, with everybody having a fun time, and most maps being identified. Difficult? No. Challenging? Yes. So many attributes are easily recognised by touch. Paper, cloth backed or dissected? Large or small covers, with one or two pieces of card? Dry fluffy card, waxy card or smooth laminated card? Paper covers, rounded corners and staples all help to narrow the field quite quickly.

If you close your eyes and imagine being handed an Ordnance Survey map in an OS cover, you will have a multitude of images flash across your mind. You will begin to hold all the different types of folded map that you own or have seen. Try it now before reading further. Close your eyes and summon up visions of maps in covers. Try it, read no further. Now repeat it and try to feel the covers. Is it a glossy benderfold or a dry, slightly brittle card cover in two parts? A small book-type cover with a hint of a waxy finish or just a wrap around cover of strong thickish paper? When given a map to identify, one, two, three or more points hit you instantly and at the same time you probably rule out more things than you pencil in. The first few seconds are the key to success. Well, for me they were. I am not saying that I can identify a map in seconds, rather that in Harrogate, the initial impression set me on the right path.

So, there you are with your eyes blindfolded, and a map is put into your hands. A multitude of thoughts bombard you at once, and although you might just be able to identify the actual map, it will be the series you are after. Initially you focus (when blindfolded?) on the cover, that which you are in contact with. Covers rule things in and rule things out, suggesting and ruling out dates. A one piece cover can be almost any date from the 1890s to the present, but only since the 1930s has a long, and fairly wide, one piece cover folded in the middle been in use. And if this is laminated, then the starting date is pushed forward to the 1960s. But if the map is cloth-backed in a laminated cover, the range of dates and maps is quite small, immediately bringing tourist maps, Seventh Series and quarter-inch maps to mind. A cloth-backed map in a laminated cover is a fairly easy start. A one piece cover hinged on the left has so many variants, and sizes. Very large ones, book size, will often have a text inside, whilst small textured covers with a paper label on the outside are remarkably distinctive, and were the first covers used by the Ordnance Survey in the 1890s. Too easy.

We should not forget that the OS produced maps on a production line system, buying equipment that could be used for the various map series available at any given date. Hence, in the 1920s, the style of covers and map folds for the one-inch and half-inch were similar, being produced, I assume, by the same machinery and systems. I believe that the covers will usually be the main indicator of the map inside, and will narrow possibilities instantly and dramatically, if only down to a few contenders.

A lot of the pre-war, two-piece covers have an unmistakeable waxy finish to them, another factor that helps pin down a particular group of maps as candidates. The covers on many Fifth and Fifth Relief Edition maps are like this and often have the added feature of the paper having a slightly waxy feel as well, the concertinaed map often feeling slightly spongy to the touch when folded. Three clues for the un-sighted. Many of the civil aviation map covers also have a waxed finish, and are frequently long and narrow, housing a map and inside legend panel both waxy to touch.

A few groups of maps can be identified pretty quickly. The six-inch town plans in the card envelope covers are like no other ever produced by the OS. Maps in pre-war benderfold covers usually have the lowest part of the sheet tucked up. The early Seventh Series also have a tuck, which the New Populars do not. Ten-mile Ansell-fold maps always feel cool to touch, and can be identified by size and cover texture, without resorting to the unique flap on the rear cover.

Pre-war archaeological maps and booklets appear in fairly lightweight but distinctive feeling paper covers, which are satisfyingly plump if prodded with a finger.

Now and again, specific maps can be identified. The Eclipse map is of a certain size and the finish to the cover is distinctive. Just as the Middle Thames tourist map on waterproof paper usually has a hint of a concave front cover. The quarter-inch RAF maps have two sorts of buff covers, those with a smooth polished finish to the outside contain maps with purple layering, whereas if the covers are a dull fluffy, slightly brittle card, the maps inside have brown layering. That would look good if blindfolded: being able to feel colours on a map. When inspecting a large pile of laminated Seventh Series maps, one can feel a difference between the all red covers, and the red and white ones. Try it.

I think the point is made, that one can go a long way towards identifying maps without actually seeing them. Which begs the question of why there is no guide to collecting Ordnance Survey maps for blind people? Examples of a lack of sight not being a hindrance are everywhere, blind cricket commentators, blind aircraft pilots, blind artists, so why not blind map collectors? Or are there? Such people might not be able to see the map detail, but they most certainly are able to appreciate the tremendous variety of sensations offered by map collecting.

Amongst the most satisfying maps to hold are those with white waxy covers dating from early last century, most often one-inch Thirds or half-inch. The two piece covers are so distinctive when handled. Very like a super-thin Wall's ice cream between wafers, the covers just extending beyond the folded map, stiff and thin, crisp, sharp even. In complete contrast are the same series dissected in white

stuck on covers, soft and slightly podgy like new fives gloves, or a pigskin notecase full of tenners (I assume). Or we might attempt a mixture of soft and crisp; individually, 1:25,000 maps with blue integral covers are crisp edged in new condition, but soft and springy in a small pile of twenty or so.

The same two attributes occur in Old Series maps, where there is something very satisfying about following Richard Oliver's suggestion and running the back of a thumb nail over the stuck-on piano key strips on early issues. One can almost hear a crisp click when the join is found. Softness comes from the felt triangles pasted on the front outside surface of folded maps. Or the nice soft feel to blind stamps and plate edge impressions on engraved sheets. Surely more pleasure is obtained by touching than seeing some features.

Obviously this is all speculation, but my vision of a blind person's map collection would include a section focusing on paper differences, which are many. The texture of the paper itself, thickish soft and fluffy for early Old Series maps; stiff and waxy examples of Place's waterproof paper or modern and slightly glossy late Seventh Series papers. Various varieties of cloth were used for strengthening maps, some quite coarse, almost a scrim as found on New Populars and War Revisions, a variety of cloths on Populars and exceedingly fine high quality cloths on some early half-inch maps. Different paper sizes abound, which might sound pretty dull to us, but again, close your eyes and imagine a collection of different papers and sizes. An advantage would be that only one example would be sought, unable to see what is on a piece of paper, why have two the same size?

And then we have the pleasure of the unexpected. Labels in different sizes and shapes, very strange folds, Ansell, Bridge's and the one-inch Popular Edition of Northern Ireland in buff covers, unlike anything else. Surely either a real treat or frustration when first encountered? Even the sighted are surprised on first seeing the two extra long benderfold Populars, and long Scottish Populars in almost 11 inch covers. Map sets issued in boxes, card or leather will be a delight to the fingers, and I defy anyone to say that sliding a folded map into or out of a slip case is not a pleasure. Again, close your eyes and imagine them.

Unlike the sighted, I cannot imagine blind people collecting only OS maps. If 'That feels different' is the equivalent of 'I have not seen that before', then surely early pinkish WH Smith map covers with the blue labels will excite, leading to Gall and Inglis, Cruchley's and the rest.

For both the sighted and un-sighted, the thin crisp glossy paper used for maps in late nineteenth century Ordnance Survey annual reports and early quarter-inch county maps, has a very distinctive sound when handled, but the sound of maps is not a topic for discussion at present. And the only thing that comes to mind concerning identifying maps by smell, is the sickly sweet smell of the Olde Map Company range on fake parchment in red paper slipcases found in tourist shops ('An antiqued parchment replica'). These are also my leading candidate for identification by taste, although I have never actually tried them as the smell is so awful.

And so, this week's competition, choose three maps, say what they would taste like and why (with or without a side dish of indexes). Obviously maps in slipcases will not be considered, as nobody in their right mind would eat a slipcase. Or would they?

To celebrate David Archer's fiftieth musings, we reprint below his first musings, published in Sheetlines 57 in April 2000. Reading this sixteen years later, it is fascinating to see just how perceptive and forward-looking it is.

David says his purpose is to inform, to nudge, to wonder and to get members thinking around the subject of OS maps. He achieved it in 2000 and happily continues to do so.

For us, the new millennium arrived in mid-December in the form of a new computer. Lots of colour, fun and frustration, with instruction manuals leaving no infinitive unsplit. Eventually, we decided to stick a toe in the water and surf, although initially we were more like jumping seagulls.

The Ordnance Survey site was an obvious early port of call, not because it was of interest, but because I knew they had a site and I wanted a successful search. For anyone who has not seen an Internet demonstration, the Ordnance Survey site can best be described as an on-line, very glossy and colourful folder containing lots of leaflets on anything OS; history, products and services, just as one might expect. However, there are also games, downloadable images and information not available elsewhere. All for free. All items have the OS logo, which, if on paper, would be prized collectors' items in fifty years time. Some images will only be available for a few weeks.

Might we call this the new ephemera and does it need our consideration?

What do I mean by the new ephemera?

The new ephemera appear first on the Ordnance Survey website and can be copied (downloaded) by an individual onto their own computer or a floppy disc.

Whilst writing this, in February 2000, the Ordnance Survey is offering "Free wallpaper to download in February", "Free downloadable mapping for the whole of Great Britain at a variety of scales", "Free GB maps: download small scale maps of Great Britain in a variety of formats", "Free! Osview: a new version of the newly enhanced software that allows you to view digital map data products", a map puzzle game and more. In fact, everything on the site can be copied onto an individual's computer. In the last issue of *Sheetlines*, Jon Risby mentioned changes to the OS website. The original text and any illustrations have now gone. The free wallpaper (background screen illustrations) mentioned above will be changed after February (I assume). Was there one for January? All very ephemeral.

How does the new ephemera differ from the old?

The new ephemera (by my definition above) can only be seen on a computer screen. It can be copied and stored on floppy discs. An appropriate computer system is needed to view it. The old ephemera was on paper and could be viewed anywhere in good light.

What are the implications of the difference?

Most examples of the old ephemera have survived because they have been tucked away and forgotten – frequently as bookmarks or slipped inside books. Paper ephemera is often in the form of leaflets, usually advertising Ordnance Survey products or services.

To survive, the new ephemera must be collected, stored and have suitable machines available to view it. Very little will turn up by chance. I just cannot envisage the computer equivalent of second-hand bookshops, with shelves of old computers amongst which someone exclaims “Hey, this one’s got some old OS web-pages saved to disc”. The technology is changing so fast that what we save on a floppy disc today might not be readable in the future unless we keep the computer as well.

So, what are the chances of CCS members in 2050 being able to study the development of the Ordnance Survey website between 1998 and 2005 by viewing the actual material? Very slim I would say. I am sure that the OS does not have a policy to create an archive of website material. Individual members of our society might start to collect web-pages and free stuff, but will soon get bored, run out of space or rediscover maps.

Which leaves the Charles Close Society to pick up the pieces, if it is thought to be worthwhile.

Fans of London’s transport maps may be interested to learn that TfL has produced a geographic version of the familiar *London Connections* map of the tube and rail network. Dated May 2014, it shows major roads and open spaces and includes the proposed route of Crossrail (now known as Elizabeth line). The recently incorporated Overground routes are labelled ‘future’.

The map seems not be available in print format, but can be download at <http://content.tfl.gov.uk/london-connections-map.pdf>

The standard diagrammatic version, now called *London’s Rail & Tube Services*, continues to be available in print and online at <https://tfl.gov.uk/maps/track>
The latest version is dated May 2016.

Meanwhile, the new version of the Tube map (June 2106) includes for the first time ‘Tramlink’, the Croydon area tram network.
<http://content.tfl.gov.uk/standard-tube-map.pdf>

Letters

The 2016 AGM acknowledged the work of Andrew Cook and Roger Hellyer (supported by Maria Mealy) in sorting and cataloguing the papers of Ian Mumford destined for the society archives.

However, a similar exercise for the bequest by Ian O'Brien of his maps and books went unrecorded and needs to be noted. With time and space both limited, the material had to be assessed, sorted and removed from Ian's house. Thanks for helping with this go to Chris Board, Nick Krebs, Roger Hellyer, Rodney Leary and Rob Wheeler. Rob Wheeler then had the challenging task of cataloguing a good car load of material, which was offered on the society's website with the assistance of John Davies, raising over £6,000 for the society.

I am sure that all members wish to thank those concerned.

David Archer

University College Dublin (UCD) Digital Library is delighted to present a fascinating collection of large scale nineteenth century Irish town and city maps. This visual resource has been made possible due to a long-standing and successful partnership with Ordnance Survey Ireland. The OSI provided the UCD Digital Library with scanned images of the five foot and ten foot to one mile scale maps chiefly surveyed between 1837 and 1896.

The Ordnance Survey Ireland nineteenth Century Historical Maps collection contains maps for almost 150 cities, towns and villages in the Republic of Ireland. Significantly, the large scale at which they were surveyed means that wonderful details such as the ground floor interior plans of public buildings from churches and banks to hospitals and railway terminals can be viewed on the maps. Find the maps by date and place and then zoom in on the beautiful cartographic detail.

These maps provide an invaluable source of information for anyone tracing the history of their family or local area. Researchers can compare the past to the present and find former street names, discover which industries formerly occupied sites, study transformations in the landscape to see how an urban site has emerged from a rural area. At street level features include benchmarks, pillar boxes, public water pumps, gas plugs, hydrants and lamp posts. Other useful information includes the parish, barony, townland, ward and municipal boundaries which are all clearly marked. With building types such as mills, foundries, dye works, barracks shown not only is architectural history visualised but clues to working life in the past are revealed. Interested in nineteenth century forms of recreation? – then locate places of culture and entertainment such as billiard rooms, galleries, tea houses, bull rings and Turkish baths.

The Ordnance Survey Ireland nineteenth Century Historical Maps provide a fantastic wealth of detail to explore.

The collection can be viewed in the UCD Digital Library at: <http://digital.ucd.ie/view/ucdlib:40377>

Julia Barrett,
Research Services Manager, UCD Library