

# *Sheetlines*

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Number 111

April 2018



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The membership year ended on 28 February and although the great majority of members had renewed by then, a few remain outstanding. If you are one of these, we do ask that you rectify this as soon as possible, by post or online (see inside back cover for contact details). Those failing to renew will not be able to attend the 12 May AGM, nor avail themselves of the special offer announced on page 36, nor receive future issues of *Sheetlines*.

Formal notice of the AGM appears on page 33 and those wishing to attend should return the slip to Rodney Leary before 1 May.

Two visits have been arranged. Please contact Bernard Anderson as soon as possible if you wish to join (contact details opposite). A small charge will apply to cover fees charged by the hosts.

On **Saturday 9 June** we visit Durham Record Office.

This is a morning visit after which there is an opportunity to explore the historic city. The archivist has promised a fascinating display of local maps. Among them will be plans of coal seams and workings specially prepared for the owners of the mines involved and large-scale maps and plans of the surrounding area. On **Monday 9 July** we visit Chester Record Office – an afternoon visit to another historic city. Here we will see a display specifically aligned to CCS members and their interest. In addition to OS maps the Record Office holds examples of early maps of the county and more specialist material covering such areas as soil type and developments including the Manchester Ship Canal, the town of Crewe and New Towns at Warrington and Runcorn.

Suggestions of venues for future visits – and especially offers to organise local meetings in various parts of the country – are welcomed. Visits and meetings form an important part of the Society's activities, for social as well as educational reasons and we do encourage you to help us to provide a varied and inspirational programme.

*Above: Chairman Gerry Zierler pulls out of the hat the winner's name for the railway termini competition, during the Society's visit to John Rylands Library Manchester in January. A report of the visit appears on page 32 and the winner's name and the solutions on page 63.*

## *City of London cartographic meander*

*John King*

### **Introduction**

This second walk, as with the previous meander,<sup>1</sup> includes a number of maps on public display, makes reference to a number of buildings and other features of cartographic interest and also looks at some of the topography of the original City. Additionally, reference is made to a number of maps of the City which are not that well known.

One structure passed under was Temple Bar that has appeared in three different locations on OS maps. Built by Sir Christopher Wren the Bar was originally located at the junction of Strand and Fleet Street but was removed in 1878 so that the street could be widened. It was bought by Valerie, Lady Meux in 1880 and erected as a folly in the grounds of Theobald's Park in Hertfordshire. In 1984 it was bought by a Trust and in 2004 reinstated in Paternoster Square some half mile east of the original location.

To the north west of Guildhall lies the outline remains of the church of St Mary Aldermanbury. Rebuilt by Wren after the Great Fire of London, it was destroyed in the 1940 Blitz. In 1966 the remains were removed and rebuilt in Fulton, Missouri as a memorial to Sir Winston Churchill. It is now some 4255 miles (6848 kms) from its original location. The outline remains of the church are still marked on OS maps.

Inevitably there are many underground structures which have to a greater or lesser degree some physical surface presence and may or may not be marked on maps. In Guildhall Square there is the grey slate outline of the Roman Amphitheatre buried beneath the Square. The outline does appear on OS maps. On Newgate Street is the Newgate Venting Tower. Now located on a traffic island on a widened Newgate Street it is all that remains of Post Office underground station marking the



site of the original lift shafts. However, it remains a functioning part of the station which was renamed St Pauls and the main entrance re-sited further to the east in 1937.<sup>2</sup>

The City does have a ghost station, namely King William Street which was the terminus of the City and South London Railway but was only used between 1890 and 1900. A blue plaque is all that indicates the remains but the underground structure is still part of London Underground.

<sup>1</sup> Reported in *Sheetlines* 109, 2.

<sup>2</sup> A post war OS map confusingly refers to the old Post Office station as St Paul's at the original location. Maps can be notoriously problematic in catching up with name changes. The original Southern Railway St Paul's station was renamed Blackfriars in 1937 at the same time but a Bartholomew's atlas still uses the old name in 1946. More recently in 1990 the nearby St Paul's Thameslink was opened and renamed in 1991 City Thameslink (at the request of the Emergency Services) but the first name still survives on many maps and in foreign guide books.

In Cornhill there is a fitting statue to James Greathead, the engineer who devised the shield system of tunnelling for tube railways. Look carefully at the base of the statue and you can see that it is used as a ventilation shaft for the Northern Line. Incidentally the Northern Line ticket office at Bank is built in the crypt of St Mary Woolnoth since the C&SLR were not permitted to erect a surface building. Their only recourse was to buy the church, underpin the church and remove the bodies from the crypt.

Just to the north of Bank where Lothbury meets Moorgate there is a road island with grilles. Listen carefully and you can hear and feel the rush of air of Docklands Light Railway trains at the end of the Bank headshunt.<sup>3</sup>

In Paternoster Square there is a monumental column 23m high with a Corinthian capital supporting a 3m high gold-plated urn with flame sprouting out. The tiered steps provide seating and the column is a focus for the Square, but the main purpose is that of a ventilation shaft for an underground service road. Just to the south-west of this column is a metallic wing structure by Thomas Heatherwick (of the New Routemaster and Olympic flame fame). Of no obvious practical value, it does in fact serve as cooling vents and radiators for a subterranean electricity substation. Curiously the column is marked on one OS map whilst the wing is not. The Square is also a good demonstration of Privately Owned Public Spaces.<sup>4</sup>

Mention is made later of the new Bloomberg HQ in Walbrook. Walbrook, the stream which supplied the Roman City of London, lay between the two hills of Ludgate and Cornhill. Despite 2000 years of history and much made ground (between 6-7m deep) the shape of the valley, although much altered, can still be discerned today. The Bloomberg/Bucklersbury site was first excavated for an archaeological investigation in the 1950s following wartime bombing, when the Temple of Mithras was discovered in 1954. Fortunately, the Temple was saved but moved to a rather lonely exposed platform alongside Queen Victoria Street and so marked on OS maps. With the recent demolition of the 1960s Bucklersbury building further archaeological investigation was made possible alongside Walbrook. Besides finding more of the Temple, some 14,000 artefacts were found, with the site being described as the “Pompeii of the North”. The Temple has now been moved back almost to its original position, some 7m down, and an underground public exhibition area created known as The London Mithraeum, which opened in November 2017.<sup>5</sup>

The walk follows a roughly circular route south from St Pauls to the South Bank, crosses London Bridge and returns to St Pauls by way Bank and Guildhall.

**Plan:** *St Paul's Cathedral pavement plan*

**Location:** South west corner of the Churchyard alongside St Paul's Churchyard street.

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<sup>3</sup> The DLR Tunnel leads from King William Street where the DLR station lies immediately under the Northern Line station. This DLR trajectory is completely wrong for the suggested extension of the DLR towards Charing Cross.

<sup>4</sup> ‘Pseudo-public spaces in London’, *The Guardian*, 24 July 2017.

<sup>5</sup> [www.londonmithraeum.com](http://www.londonmithraeum.com)



The pavement plan is a recent installation being created in 2008. The plan is seven metres long made out of Purbeck stone and Welsh slate. It shows the layout and orientation of the old, pre-1666 Great Fire of London Cathedral overlain by the Sir Christopher Wren Cathedral built between 1675 and 1710. A subtle use of different stonework allows the two plans to be clearly differentiated. The hand-carved border to the plan has an explanatory inscription. Interestingly, there is a marked difference in the west-east orientation between the two structures but so far, no explanation has been found for this variation. The scale of the pavement plan is approximately 1:20, the length of the actual Cathedral being 158 metres.

Archaeological excavations of the South Churchyard took place between 2007 and 2008 revealing that parts of the old Cathedral and particularly the Chapter House had been built with Purbeck marble and stone. This in turn inspired the architect Martin Stancliffe to use Purbeck stone in the hard landscaping of the south Churchyard. The Cathedral pavement plan was designed by Richard Kindersley.

**Map:** *City of London information map (see photo in Sheetlines 110, 46)*

**Location:** To the east of the City of London Information Centre on the south side of St Paul's Churchyard.

Although a modern map these information maps are very distinctive and occur in several locations around the City. With a map size of 2.1 x 1.5 metres, marble base and very durable construction they cannot be easily missed. Technically they are probably part of the City Corporation's *Wayfinding* system (which is distinct from the TfL *Legible London* system which now covers the rest of Greater London). The size of the City of London (some 1.12 square miles/2.9 km<sup>2</sup>) means that the whole City can be easily displayed on one map.<sup>6</sup>

Produced by the City Corporation and OS, this example has a 2008 date. It is double sided with an alphanumeric grid and index in nine languages showing public buildings, places of worship, livery halls, places of interest and stations. It is not immediately apparent what the map surface is made of but it is clearly very durable and easily cleaned. Each grid square is approximately 200m x 200m. No scale is given apart from a five minute/400m walking distance but it is approximately 1:1850 or 3 inches to 1 mile.

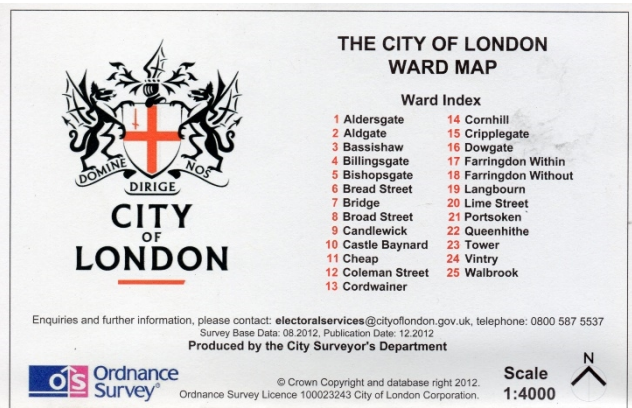
On the walk two other examples of these information maps were seen. Firstly, outside St Paul's underground station in Panyer Alley (dated 2008 and the similar to the above example) and secondly in Aldermanbury alongside the Guildhall. The latter with no date or OS attribution probably predates the other two examples and may have been a prototype. There is no grid on the map and an alphanumeric system, with a much smaller spacing, only along the edges but in all other respects is very similar to the others. There is a further known example located outside

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<sup>6</sup> Roman Londinium covered about half a square mile which by Victorian times had grown to 1.05 sq miles. In 1994 some of the awkward (described as wibbly-wobbly at the time!) boundaries were changed to increase the size of the City to its present area. The changes in 1994 added Goswell Road (formerly in Islington) to the City, the first and only Road in the City. The boundary actually runs down the middle of the road so perhaps it is only a half-road.

Fenchurch Street Station but at present it is not known how many there are across the whole City.

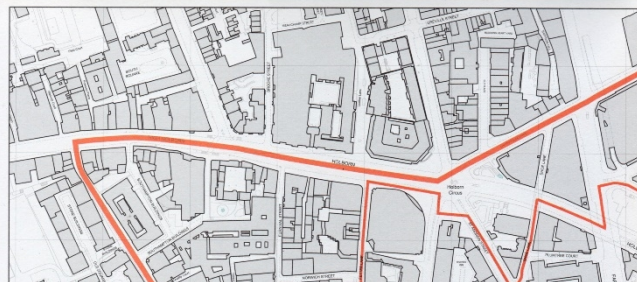
Although durable the question does arise as to how easy it will be to update these information maps. The City of London is constantly changing and a good example is the new Bloomberg HQs building alongside Walbrook. The City Planners insisted on the restitution of an old route across the Bucklersbury site, namely the original line of Watling Street and Budge Row. This had disappeared in the 1960s rebuilding and although now named Bloomberg Arcade is proving to be an important pedestrian route between Queen Victoria Street, Walbrook and Cannon Street.



### ***Paper map: City of London OS Ward map***

This paper map, clearly badged with the City of London shield and the OS logo, was produced by the City Surveyor's Department in 2012 using OS data. The scale is 1:4000 showing all the streets, alleys and courtyards as well as detailed building outlines. Ward boundaries are shown by distinct red lines. The map is dated 8 December 2012.

There appear to have been at least two previous editions, a 2007 edition at 1:4000, very similar to the 2012 map, and a 1994 edition at a scale of 1:3960. The latter has a rather crude depiction of buildings, generalised street patterns and key public buildings depicted in red.



Both use red lines for the ward boundaries.

Prior to the OS maps there was a Geographia-produced Ward Map of the City produced in April 1980 at a scale of 1:3960. The map is paper but laminated and compares favourably with the OS 1994 edition. Information on any other editions/dates of these maps would be gratefully received. Copies of the most recent OS map can be purchased at the Guildhall Library.

### ***Paper map: London County Council bomb maps/City Corporation bomb maps***

It was appropriate to introduce this map since close to the City information map is found the National Fire Fighters Memorial symbolically located to the south of St Paul's in an area that was badly bombed during WW2. Originally named "Blitz" the memorial was renamed in 2003.

Many will be familiar with the LCC bomb maps first published in book form by the London Topographical Society in 2005 and subsequently republished in 2015 by Lawrence Ward. The 110 meticulously coloured 1:25,000 maps are an important historical legacy.

What are perhaps less well known are the City Corporation's bomb maps, never published, but the details of which were included, at a reduced scale, in the LCC maps. The City maps were drawn at a scale of 1:1250 but surveyed at a scale of 1:1056 (60 inches to 1 mile). The job of surveying the City's bomb damage was given to nine different City architectural practices but all apparently working to a common scheme devised by the City Surveyor's Department. The colouring scheme was more complex and detailed than the LCC maps. Examples of these maps can be found in the LTS publication and can be viewed at the Guildhall Library.

**Feature:** *London millennium funicular*

**Location:** on east side of the north bank walkway alongside the Millennium Bridge



Very few people will be aware that there is a funicular in the City of London. Officially known as the London millennium funicular, and operated by the City Corporation, it is known by a number of different titles including millennium inclinator, millennium bridge inclinator or the millennium bridge inclined lift! (or is it just an inclined elevator?). First opened in December 2003 it runs between Paul's Walk, alongside the River Thames, and Peter's Hill, thus avoiding a steep climb up the river cliff. It has a metre gauge track, one enclosed cabin, which can hold four people, and is otherwise open to the elements. There have been numerous problems with the funicular but it is free to

use. As yet the funicular has not been marked on any OS or other map, including the City Corporation's own online map which uses OS Data.

Incidentally the view from the Millennium Bridge towards St Paul's or from St Paul's towards the river with a gap created in the building line, partly as the result of wartime bombing was first proposed in the 1944 "Reconstruction in the City of London".

**Map:** *Shakespeare-themed TfL Underground map.*

**Location:** Bankside Pier, south side of River Thames adjacent to the Globe Theatre. (best viewed from the bridge leading to the pontoon).

In April 2016 the London Transport Museum and the Globe Theatre produced a Shakespeare-themed TfL Underground poster map to mark the 400th anniversary of the playwright's death. All fourteen lines have been renamed with themes such as Circle Line "Plays", Northern Line "Villains and Rivals", Central Line "Lovers" and Piccadilly Line "Heroes". Stations have been renamed with characters from the plays.

As part of the launch of the poster map, the glass sides of Bankside Pier were covered in an enlarged see-through vinyl of the map. The poster map, combining two British icons, is apparently a top seller. A further poster "Thou art here" using the underground map style to show a cross-river link is also displayed on the pier.

There have been numerous examples of Harry Beck's topological underground map being used with particular themes in place of the station names. The first was



probably “The Great Bear” by Simon Patterson in 1992 and more recent examples are the Team GB Olympic and Paralympic GB successes of athletes in 2012.

However, the map covering Bankside Pier would appear to be the first time that such a map has been enlarged to such a size and put on public display.

**Map:** *Frost Fairs slate maps (see photo in Sheetlines 110, 46)*

**Location:** Thameside pedestrian walkway, south side, north facing, underneath Southwark Bridge.

A rather dark arched passageway underneath the south end of Southwark Bridge was enlivened by the installation of five relief slate map panels in 1997. The panels were commissioned by the Southwark Trust, sponsored by the Financial Times and the supermarket chain Sainsbury’s, and designed by Richard Kindersley (of the St Paul’s pavement plan).

The relief panels don’t relate to any specific map but are based upon contemporary woodcuts, found in the Museum of London, representing the Thameside river bank of Southwark at the time of the Frost Fairs between the 16th and 18th centuries (details from Richard Kindersley). The panels include details of the Frost Fairs and buildings in Southwark showing that before the 19th century there was still much open land on this side of the river.

The Thames freezing over was less frequent than modern legend sometimes suggests, never exceeding about one year in ten. The last Frost Fair was in 1814. The removal of the medieval London Bridge in 1835, with the numerous arches acting as a partial dam, prevented any further freezing over of the river. The panels are accompanied by the poem “Behold the liquid Thames frozen o’re” first published, it is believed, in January 1716. The authorship is not clear but the poem is frequently reprinted and quoted.

The lighting in the underpass is poor and even with some artificial light it still remains difficult to see and read the details on the panels. There is no plaque explaining the background to the slate panels and most people walk straight past the maps but it was noticeable on both walks that since we were looking at the panels other people did as well!

**Map:** *Jubilee Walkway plaque, The Seven Phases of Old London Bridge (see photo in Sheetlines 110, 46)*

**Location:** Cathedral Square, Bankside, just to the north of Southwark Cathedral  
A new Jubilee Walkway plaque was unveiled on the riverside in March 2017. It depicts an annotated skyline view from Cathedral Square of the north bank of the river and a map of the Walkway route. In addition, there is a highly detailed reproduction of the drawing “The Seven Phases of Old London Bridge”, essentially the Medieval bridge, between 1209 and 1831. This is taken from the book “Old London Bridge” by Gordon Home originally published in 1931.

This drawing had at one time been previously reproduced as a huge mural on the west (?) warehouse wall of the Mermaid Theatre which stood in Puddle Dock on the north bank of the river. When the site was redeveloped in the 1980s the mural was destroyed. No photograph has yet been found of the mural.

In Cathedral Square there are numerous granite pavement stones from the John Rennie London Bridge (1831-1967) which did not make the transatlantic journey to Lake Havasu, Arizona.

**Feature:** *Iron rails in road marking the original line of Old London Bridge*

**Location:** Tooley Street just to the east of the archway underneath London Bridge  
The line of the Old London Bridge is marked across the Thames on several historic large-scale OS plans. Remarkably the physical position of the original Bridge is marked out in the pavements and roadway of Tooley Street just to the east of the present Bridge. Twin cast iron rails cross the road, clearly cast "Old London Bridge". Presumably Southwark Council was responsible for laying these rails but so far, no information has been found as to when. They are somewhat hidden away in a rather dark part of Tooley Street. Suffice to say these rails do not appear on any OS map.

**Feature:** *Southwark Gateway Needle*

**Location:** London Bridge approach road, east side, above Tooley Street.

The Southwark Gateway Needle built in 2000 and designed by Jose de Pavia is a Portland Stone spike tilted at an angle of 19.5 degrees and pointing into the ground in a north-easterly direction. There is no plaque on the Needle to explain the structure. Despite several online sites stating that the Needle is a representation of the spikes on which the heads of traitors were placed it does in fact point down to the twin rails in Tooley Street and the line of Old London Bridge. According to the designer it is in fact pointing to the original Southwark river bank where the Bridge originally began. The Needle does not appear on any OS maps.

**Building:** *St Magnus the Martyr Church*

**Location:** Thames Street, City

On the north bank of the river, somewhat hidden away by modern buildings is the Church of St Magnus the Martyr. Just to the west of the porch are three large stones claimed to be from the Old London Bridge. The approach to the Bridge led from Fish Street Hill through the porch and churchyard of St Magnus. Also in the porch there is a Roman wharf pile, found when the present Wren church was built. This indicates the rough position of the Roman river bank and the considerable extent of reclamation since Roman times. Inside the church is a large model of Old London Bridge. The steep rise of Fish Street Hill to the north of the church mirrors the river cliff first encountered between Paul's Walk and Peter's Hill.

**Feature:** *London Stone*

**Location:** 111 Cannon Street

This irregular and rather degraded block of Limestone, possibly Clipsham Limestone from Rutland or Bath Stone, was originally located on the south side of the street where Cannon Street station now stands and directly in line with the end of Watling Street. The Stone was removed to the north side of the street in 1742, because of building works, and was later incorporated in the south wall of the Church of St Swithun in 1798. The Church was gutted in the Blitz in 1940 and the ruins eventually demolished in 1962. The Stone survived to be incorporated into the wall of the

commercial development, latterly WH Smith, built on the site of the Church. This development in turn has been recently demolished with the Stone being temporarily removed to the Museum of London for safekeeping.

The City Planners have insisted that the Stone be returned to its 1742 position when the new office development is completed. Despite much argument this has now been agreed. At present the building hoardings have a large photograph and explanation about the Stone. The Stone was Grade II\* listed in 1972.

There have been numerous discussions as to the origin and meaning of the Stone. In the 16th century it was said to be a Roman Milliarium, a central stone from which all distances were measured. Another possibility is that it is a Terminus Stone, a stone sacred to Jupiter that stood at the centre of every Roman city. In the 19th century the Stone was regarded very much as a talismanic monument or Palladium in which the City's safety and wellbeing were embodied. Archaeological excavations on the south side of the street in the twentieth century revealed that the Stone, in its original position, would have been at the main gate of a large Roman building. Some have interpreted this building as a Pretorium or Governor's Palace with the gate marking a cross roads of Roman roads at the end of Watling Street. Hence the idea that the Stone could have been a marker from which all Roman Road distances were measured. Indeed, in the late 19th and early twentieth centuries in common culture it was often thought that all distances from London were measured from this Stone. (The actual location was in fact at the site of the original Charing Cross on the south side of Trafalgar Square.) Whatever the history of this Stone it is a feature marked on numerous OS large scale maps. It is understood that when the Stone is returned it will be displayed far more prominently and with a fuller explanation alongside.

**Map:** *Royal Exchange, Jubilee Walkway*

**Location:** On raised pavement in front of Royal Exchange

This is a very different Jubilee Walkway marker compared to the others seen, being a four-sided pyramidal design made out of shiny stainless steel. A map is engraved on one side whilst the other sides have detailed annotated perspective views of the buildings and statues surrounding the Bank junction in the centre of the City. It was last updated in 2002. A smaller one-sided Jubilee Walkway plaque, carrying less detailed information is located on the corner of Poultry and Queen Victoria Street.

**Paper Map:** *James Wyld's map of the City of London 1842. Overprinted with street improvements since 1824 and published by the Engineers to the City Corporation, November 1903.*

Close to the pyramidal board in front of the Royal Exchange is an equestrian statue of the Duke of Wellington at the junction of Threadneedle Street and Cornhill. The statue is cast from cannons captured from the French at the Battle of Waterloo and was erected in 1844. This statue may seem quite a surprising statue to be found in the City, particularly given some of the Duke's political views. However, the statue was erected by the City Corporation as a mark of appreciation of the Duke's assistance in the passage of The London Bridge Approaches Act 1827 which among



other impacts created King William Street built between 1829 and 1835. King William Street is just one of many new or widened thoroughfares shown on James Wyld's 1842 overprinted map, published at a scale of 25 inches to 1 mile, in a dramatic shade of red and showing all of the Street improvements from 1824 up to the turn of the Century. The map was published by the Corporation as part of the Royal Commission on London Traffic in 1904 and was subsequently included in "Reconstruction in the City", published in 1944 by BT Batsford for the Corporation.

Other streets shown on the map include the new Queen Victoria Street (1869), the widened Cannon Street (1854) and the widened Moorgate (London Wall to Lothbury, 1840s). The overprinted map of 1903 reflects the evolving 19th century City of London before the significant changes created by bombing in the Second World War. Wyld's original map is reasonably well known, but the 1903 map, less well known, is significant because of its relevance to the history of urban planning.



### ***Paper Map: Bartholomew's Road Surface Map of London***

Walking towards the Royal Exchange took the CCS group past Lombard Street. This street at one time had a rubber road surface believed to have been wooden blocks covered in rubber. The earliest references found for this surface was 1908 but there is a possibility that a rubber road surface existed in the 1890s. Resurfacing took place in 1942, with questions being raised in the Commons, but the surface was finally replaced with tar macadam in the late 1960s.

The reason for the rubber road surface relates to Lombard Street being the original home to the great clearing banks. They did not want to be disturbed by the noise of metal rimmed wheels clattering over cobble stones!<sup>7</sup>

Researching this rubber road surface led to many references to

city and town road surfaces in the late 19th and early twentieth centuries and eventually to the Bartholomew *Road Surface Map of London*. So far only one

<sup>7</sup> Lloyds Bank at 71 Lombard Street built a new Art Deco headquarters in the 1930s with rubber floor tiling in the main banking hall. This building, although no longer occupied by Lloyds, is Grade II listed.

example has been seen. The map is at a scale of 2 inches to 1 mile and divided into one-mile grid squares. Streets are colour coded as follows: Yellow=Wood. Green=Asphalt. Purple=Tar macadam. Pink=Macadam. Blue=Setts or Cobbles.

On the example seen from the 1920s Lombard Street is coloured green and there is no mention of rubber. The key is further qualified by saying that the marking for macadam does not show the quality of the surface. Where tramways are shown the colour-coding refers to the area outside the tracks, the latter having either stone setts or wood paving. Research has shown the probable existence of at least four editions of this Road Surface map in 1903, 1909, 1922 and 1928, with a further two possible editions in 1920 and 1925. Any information from members confirming the above details would be most welcome.

The online Bartholomew collection at the NLS makes no reference to these maps of London, nor do there appear to be any other road surface maps examples for other British cities.

**Feature:** *Roman Amphitheatre*

**Location:** Guildhall Square

Marked out in grey Delabole Slate in Guildhall Square is the elliptical outline of the Roman Amphitheatre, some 80m wide and which lies some 8m below present ground level (an indication of the amount of made ground at this location). The Amphitheatre remains were discovered between 1985 and 1988 when foundations for the City of London Art Gallery were being dug. The discovery led to the imaginative incorporation of the remains into the basement of the Gallery. First built in AD74 and rebuilt in AD120 the Amphitheatre appears to have been abandoned by the fourth century. It would have held up to 6000 people.

With the completion of the Gallery the Square was repaved with the grey slate outline, an interesting way of showing an underground feature. The outline is also marked on the City's own *Wayfinding* pillar (which makes use of OS data) on Aldermanbury on the south west corner of the Square. It is yet to appear on the City's online map.

**Feature:** *Bench mark flush bracket OSBM S0541*

**Location:** On north transept at north west angle, west face of St Paul's Cathedral (Grid reference TQ32038117)



This flush bracket has a laser ranging disk affixed to the datum level. The bench mark was used in the re-levelling of Greater London (1931-1934) and was levelled with a height of 56.7150 feet (17.2867m) above mean sea level (Newlyn). It was included in the Croydon (East) to British Museum levelling line. It was subsequently re-used during the Third Geodetic levelling, England and Wales (1950-1968), being included on the Croydon to Buntingford levelling line (details from [www.bench-marks.org.uk](http://www.bench-marks.org.uk)). The bench mark recorded on the south transept of the Cathedral on twentieth century OS maps appears to have disappeared.



The two visits by the CCS have been duly recorded on the above website reporting that this bench mark was found in “Good Condition”.

**Building:** *Dome of St Paul’s Cathedral*

**Location:** Viewed from the public roof terrace of One New Change, a shopping centre on the east side of New Change.



The dome of St Paul’s appears to have been used by OS on at least three occasions to serve as a Trigonometrical Station.

In 1799 Captain Mudge used the dome as an intermediary station between Hanger Hill and Sevendroog Tower, some 15 miles apart. Smog proved difficult for sightings even when surveying flares were used. This triangulation survey of North East London took place in the Spring and Summer of 1799. So far, no record has been found of what sort of structure, if any, was placed on the dome.

Further use of the dome for surveying took place between 1848-1850 for the 5 inches to one mile map of London. This map was eventually to run to some 847 separate sheets. A Company of Royal Sappers and Miners under the command of Captain William Yolland, erected a temporary observatory immediately above the ball and cross on top of the dome. The observatory structure, some 92 feet high, was designed by a Sgt Beaton. Whilst being erected two pieces of wood dropped from a great height striking the pavement with a report “like the booming of a piece of Ordnance”.<sup>8</sup> Once constructed, Surveyor Sgt James Steel made between 8000-10,000 observations in four months between May and August 1849 with the smaller 18-inch theodolite. Although smog was a problem it seemed less so than in 1799.

The OS, with such a large and distinctive structure on top of the dome, could not help being noticed and commented upon, hence even a Punch cartoon and other sketches of the observatory.

A further use was made of the dome in 1873 for another 5 inches to one mile map but it is not clear if any structure was built on top of the dome. St Paul’s Trigonometrical Station was listed as Number 13 in the OS Survey of Great Britain and Ireland.

The public terrace of One New Change can be accessed for free using the glass-sided lifts, which as they ascend, afford a fine view of the cathedral and dome. The break in the building line, to give this view, was apparently proposed by the City Planners who were inspired by the poster “The Proud City - a new view of St Paul’s Cathedral” painted by Walter E Spradberry in 1944 for London Transport.

*Photographs by John Davies and David Watt*

<sup>8</sup> Seymour (Ed), *A History of the Ordnance Survey*, 1980, p.120.



## ***Ordnance Survey covers and titles***

***Derek Deadman***

I was pleased to see the new CCS online map covers collection,<sup>1</sup> as mentioned in *Sheetlines* 110. For John Paddy Browne's *Map Cover Art*,<sup>2</sup> Roger Hellyer devised a numbering system to identify Ordnance Survey cover types. This book, and his *Ordnance Survey Small-scale Maps Indexes 1801-1998*<sup>3</sup> give much invaluable information. What seems to be lacking in both, however, is a list of which covers may be found on which maps within series. This is particularly true of some 'sub-series' within standard series and includes alternatives to the adhesive and hinged map such as book-fold and Bender covers.

Based on Roger's numbers, which are also used in the CCS online collection, I have compiled a provisional list of cover titles (not map titles which may differ from cover titles). I am very aware that there remain many gaps to fill. A comprehensive list to go with the online collection would be of great interest and value to CCS members and I would like to suggest that members be invited to contribute information to create such a list. The following details are incomplete and I'd ask anyone able to provide additional information or corrections to please contact the editor.

### **1.1** Textured red cloth. Title label, book-fold.

Tim Nicholson<sup>4</sup> provides a full list of the series sheets of the One-inch Revised New Series Map of England and Wales in colour which also includes details of the many sheets in that series that are known in 1.1 covers. However, district maps from the one-inch Revised New Series Map of England and Wales (outline with coloured main roads) are also known in these covers.

Known district maps: Bradford; Leeds, Nottingham, Weymouth.

### **1.2** Textured red cloth. Gold printing, adhesive. One-inch engraved maps of the Manchester-Liverpool-Wrexham area. 14 Sheets. Source *Sheetlines* 38, 10.

Known sheets (believed complete): 83, 84, 85, 86, 96, 97, 98, 99, 108, 109, 110, 111, 121, 122.

### **8.1.a.1** "Official" Royal arms. Single lineation on buff. One-inch. Black arms and red. Location map.

Known sheets: The Aldershot Command (G.R. or E.R. arms); Aldershot District (South) – two typefaces known (upper and lower case) for title; Barnsley and District; Birmingham and Wolverhampton; Birmingham, Wolverhampton and District; Bolton, Bury and District; Dorking & Leith Hill; Glasgow District; Hastings, Bexhill and District, Hastings, Bexhill and Eastbourne (cover title on

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<sup>1</sup> <https://www.charlesclosesociety.org/coversintro>

<sup>2</sup> published by Ordnance Survey 1991.

<sup>3</sup> published by David Archer, 1999.

<sup>4</sup> *The Birth of the Modern Ordnance Survey Small-Scale Map. The Revised New Series colour printed one-inch map of England and Wales 1897-1914.* Charles Close Society, 2002.

adhesive label); Hastings, Bexhill and Eastbourne (cover title printed); Hertford and St Albans District; Huddersfield and District; Ilkley District; Ipswich & Felixstowe District, Leeds District; London (North); London (South); Maidstone and Tunbridge Wells; Manchester District; North East Wales; North Staffordshire; Rugby District, Salisbury Plain; Sidmouth, Exmouth and District (two settings of title with 'and' in upper or lower case); Southampton and District; Weston super Mare (covers with and without compass on front cover map); Winchester District; Worcester & Malvern District.

**8.1.a.2** "Official" Royal arms. Single lineation on buff. Black arms and red. No location map.

One-inch. Known: Barnsley and District; Bolton, Bury and District; Dorking & Leith Hill.

Half-inch. Known: Birmingham District Special District (Relief) map; Island of Skye. Special District (Relief) map.

All maps known are hinged except Island of Skye which is known in both hinged and Bender covers.

**8.3.a** Double lineation. Red on white paper. Six-inch (black) town maps, 1931-34. 25 town maps. Source: *Sheetlines* 7, 13; *Sheetlines* 8, 17.

Known (believed complete): Blackburn; Blackpool; Bolton, Brighton & Hove; Doncaster; Fleetwood & Cleveleys; Guildford; Halifax; Hastings; Huddersfield; Kingston upon Hull; Leicester; Middlesbrough; Norwich; Portsmouth; Preston; Rochdale; Scarborough; Shrewsbury; Southampton; Southport; Taunton; Wakefield; Weymouth; York.

**10.1** Royal arms with mantling. One-inch. Black cover with red sheet name. England & Wales Third Edition, Large Sheet Series sheets/district maps.

Series Sheets. Neither Scotland nor Ireland sheets were issued with this cover. All 152 numbered series sheets of England & Wales are presumed to have been printed with this cover. Hellyer and Oliver <sup>5</sup> state that "Only LSS 3, 5, 91 and 125 have yet to be recorded in these black and red covers".

Book-fold covers. Known sheets: 96, 99, 106

On district maps, Messenger 6 (p.28) states that 'only six of these sheets have been found' in these covers, though he actually lists seven. Felixstowe District, Maidenhead District and Sidmouth District may now be added to his records.

Known district maps: Cambridge District; Dorking District; Felixstowe District; Hastings District, London District (North), London District (South); Maidenhead District, Newquay District; Oxford District; Sidmouth District.

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<sup>5</sup> Roger Hellyer and Richard Oliver, *A guide to the Ordnance Survey one-inch Third Edition maps, in colour*. Charles Close Society. 2004, p.81.

<sup>6</sup> Guy Messenger, *The Ordnance Survey One-inch Map of England and Wales. Third Edition (Large Sheet Series)*. Charles Close Society. 1988, p.28.



Top row: 1.2, 8.1.a.1, 8.1.a.2,  
8.3.a.1, 10.1

Second row: 10.2, 11.1.a,  
11.1.c, 11.2.a, 11.2.c

Third row: 11.2.d, 12.1.b,  
12.1.b, 12.2.a, 12.2.b

Bottom row: 13.1.a, 13.1.b,  
14.1

These thumbnail images are not to scale. Please see the website  
<https://www.charlesclosesociety.org/coversintro> for larger images (which you can  
zoom) and for the dimensions of the covers





Top row: 16.2.a, 16.2.b, 16.2.c, 18.2.b, 19.1.b,

Second row: 23.1.a, 23.2.b, 28, 29

Bottom row: 27.1, 30, 73

Images are not to scale.

**10.2** Royal arms with mantling. Dark red and brown cover. One-inch. England & Wales Third Edition, Large Sheet Series. Coloured edition. Series sheets/district maps. Scotland Third Edition/Ireland Series sheets/district maps.

It is presumed that all Third Edition (Large Sheet Series) numbered sheets of England & Wales and Third Edition in colour numbered sheets of Scotland were printed with this cover. The question as to which Irish sheets carried this cover remains problematical. A full carto-bibliography is provided by Hellyer and Oliver.

District maps: Guy Messenger (p.28) states that these covers 'are known to have been printed for all 23 LSS District sheets' for England and Wales. This number is made up from 19 sheets 'Derived directly from sheets of the LSS' and (presumably) four out of five 'Experiments in Popular Edition Style' (viz: Dorking and Leith Hill District; Ilkley District; York District; Lake District Tourist Sheet and Snowdon Tourist Sheet). However, he does not record explicitly Lake District, Snowdon and District, Winchester District or York District as known with these covers. Winchester District certainly exists in covers of this form. Hellyer and Oliver (pp 121-22) list 23 district maps that exclude the two tourist maps but include Windsor and Neighbourhood and York.

Known district maps: England: Brighton District; Cambridge District; Dorking District; Exmouth District; Folkestone District; Hastings District; Ilkley District; Ipswich District; Land's End District; London (North); London (South); Maidenhead District; Newquay District; Oxford District; Pwllheli District; Reading District; Rugby District; Sidmouth District; Staffordshire Potteries & District; Weston Super Mare District; Winchester District; Worcester District.

Scotland. Known district maps: Third edition, Coloured edition. Aberdeen District; Glasgow District.

Ireland: Known District maps. No information.

**11.1.a** Popular Edition. One-inch. England & Wales. Black (buff) covers, red sheet name. Source; Yolande Hodson.<sup>7</sup>

Known sheets: 91, 92, 102, 103, 104, 110, 111, 112, 113, 118, 119, 120, 121, 122, 123, 127, 128, 129, 130, 131, 132, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146. It is presumed that all these sheets were issued in adhesive covers.

Book-fold covers. Known sheets: 118, 119, 120, 127, 128, 138, 139, 145.

**11.1.c** Popular Edition. One-inch. England & Wales. Place's Paper legend. Series sheets on Place's Waterproof Paper. Source; Yolande Hodson.

The following were printed on Place's Waterproof paper; 'they may not all have been issued in the special 'buff' waterproof style covers'. Sheets: 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 19, 22, 23, 24, 26, 28, 29, 32, 33, 35, 36, 37, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 61, 62, 63, 64, 65, 67, 69, 70, 71, 72, 73, 82, 83, 87, 90, 91, 93, 94, 96, 97, 99, 100, 101, 102, 103, 105, 106, 107, 108, 109, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 124, 125, 126, 127, 129, 130, 133, 134, 136, 137, 138, 140, 141, 142, 143, 144, 145, 146.

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<sup>7</sup> *Popular Maps*. Charles Close Society. 1999. p.381.



*Sheetlines* 22, 19-21, *Sheetlines* 23, 25-26 and *Sheetlines* 27, 25-6 list the sheet numbers of maps confirmed at that time with the 'buff' waterproof 11.1.c covers as sheets 2, 12, 23, 33, 43, 47, 90, 116, 120, 124, 133, 142. To these may now be added sheets 22, 26, 63, 82, 95, 108, 117 and 136.

**11.2.a** Popular Edition. One-inch. England & Wales. Dark red and black. Location map. Series sheets except sheet 17 (pictorial cover) and 140 (place-name list). All other 144 numbered series sheets known in this cover.

Known district maps: Aldershot District (North); Aldershot District (South); York District; Salisbury Plain; The Aldershot Command.

Book-fold covers ('wrap round'). Known sheets: 1, 4, 14, 16, 23, 25, 26, 36, 40, 41, 42, 43, 45, 49, 50, 52, 55, 57, 58, 61, 64, 68, 70, 72, 76, 77, 78, 79, 80, 81, 82 (two cover titles. Stratford on Avon and Stratford-on-Avon and District), 85, 87, 88, 91, 92, 93, 94, 98, 99, 100, 101, 104, 105, 111, 113, 116, 118, 120, 122, 123, 126, 127, 131, 133, 134, 135, 136, 139, 141, 142, 143, 145, 146.

**11.2.c** Popular Edition. One-inch. England & Wales. With Stanford's addresses. Coloured/outline series/district maps. Stanford addresses. Four forms of address shown in Hodson (p.277).

Outline series: a proof of a cover of type 11.1.a is illustrated in Hodson (p.31). Whether copies exist in type 11.2.c (dark red and black) is unknown. An outline series map is also known in covers 8.2.

Known district map: South London.

**11.2.d** Popular Edition. One-inch. England & Wales. Black sheet name. Series sheets 1939. Covers with sheet names in black may be found on Bender covers or on maps mounted in sections.

Hodson (p.382) gives the following list ('not exhaustive') of 62 sheets known issued in Bender covers: 3, 6, 7, 12, 13, 14, 16, 21, 22, 25, 26, 27, 28, 30, 31, 37, 41, 43, 45, 46, 47, 48, 49, 50, 51, 53, 54, 56, 59, 60, 61, 62, 63, 64, 68, 69, 70, 71, 72, 75, 76, 78, 79, 80, 81, 82, 83, 85, 89, 90, 92, 93, 98, 99, 101, 109, 116, 117, 126, 133, 134, 135. Her list also indicates the sheets known with a sheet title on the spine.

Sheets mounted in sections with black sheet names. Known sheets: 26, 69.

**12.1.a** Car passing signpost. Half-inch layered/hill-shaded Editions. Recorded only with book-fold covers. Black, full red title. England & Wales series sheets. 1919.

Known book-fold sheets: 30, 32, 33, 34, 35, 36, 37, 40.

**12.1.b** Car passing signpost. Half-inch, black, red sheet name. England and Wales series sheets, 1919.

Probably all 40 numbered sheets were printed with this cover.

Known sheets: 1-8; 10-31; 34, 36, 37, 39.

**12.2.a** Car passing signpost. Half-inch, green and brown. England & Wales (40 numbered sheets)/Scotland (34 numbered sheets)/Ireland (25 numbered sheets) series sheets. G.R. arms. All numbered series sheets are known for each country with these arms. Covers with E.R. arms are also known to exist for maps of England & Wales.

Known sheets E.R. arms: 15, 21, 24, 28, 30, 31, 33, 36 (renamed South Devon), 37, 40.

Book-fold covers for England and Wales. G.R. arms. Known sheets: 27, 32.

Book-fold covers for England and Wales. E.R. arms. Known: Sheet: 40.

No information on Scotland covers with E.R. arms.

District maps: Reported as existing but no sheets in these covers known.

**12.2.b** Car passing signpost. Half-inch, green and brown. England & Wales/Scotland series sheets. Brown sheet name.

England. Known sheets: 9, 12, 13, 22, 23, 28, 31, 32, 35, 36, 39, 40.

Scotland. Known sheets: Scotland. 5, 10.

**13.1.a** Motor cyclist at signpost. Quarter-inch, blue sheet name. Third edition/Third Edition (New Series). England & Wales/Scotland series sheets. 1919.

All England & Wales (12 sheets) and Scotland (10 sheets) known. Some sheets thought to have been issued in book-fold covers but no sheets known.

**13.1.b** Motor cyclist at signpost. Quarter-inch, black sheet name. Third Edition (New Series). England and Wales (12 sheets)/Scotland (10 sheets) series sheets. c1932. It is presumed that all covers were printed with black sheet names.

Book-fold. England & Wales. Known sheet: 2A.

**14.1** A31 signpost. Black on orange paper. Half-inch England and Wales/Scotland series sheets. Ministry of Transport road map. All sheets England & Wales (39 sheets) and Scotland (34 sheets) known printed with G.R. arms.

A later printing of a number of sheets bearing E.R. arms is known. Known sheets with E.R. arms: 19; 22.

**16.2.a** Scottish lion rampant. One-inch. Scotland Popular Edition. Long format series c1928.

Known sheets: 49, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64.

**16.2.b** Scottish lion rampant. Standard format. One-inch. Scotland Popular Edition. Maps on Place's waterproof paper with 'Printed on Place's Waterproof Paper' at foot of cover.

Known sheets: 12, 16, 17, 18, 19, 20, 21, 24, 49, 54, 55, 56, 58, 62, 67, 72, 89/5.

One-inch Scotland Popular Edition. Standard format (not waterproof). Red sheet name.

Book-fold covers. Known sheet: 19.

**16.2.c** Scottish lion rampant. One-inch. Scotland Popular Edition. Black sheet name. 1939.

Known hinged sheets: 2, 7, 9, 10, 16, 18, 24, 32, 33, 39, 42, 61, 62, 64, 69, 71, 74, 81, 92.

Bender covers. 1939-40. Known sheets: 41, 72, 73, 74.

**18.2.b** Quarter-inch Aviation maps. Civil Air Edition. Scotland. No location maps.

Known sheets: 3, 4, 5, 7, 10.

**19.1.b** Long format Great Britain Civil Air Edition, 1934. Three sheets. G.R. arms or E.R. arms. All sheets known with both arms.

**23.1.a** One-inch England & Wales Fifth (Relief) Edition. Place's Waterproof legend. No location map. Series sheets/Special District (Relief) maps. Source: Richard Oliver.<sup>8</sup>

Known series sheets: 113, 114, 115, 118, 119, 123, 124, 127, 128, 136, 138, 143, 144, 145.

Special District (Relief) Map. Known: Aldershot North, Hindhead and District (Aldershot, South);

**23.2.a** One-inch England & Wales Fifth Edition. Blue and black covers. Blue sheet names. With location map.

Book-fold covers. Known sheets: 94, 96, 102, 107, 115, 119, 123, 125, 128, 129, 130, 136, 138, 144, 145, 146.

Bender covers. Known sheets: 131.

**23.2.b** One-inch England & Wales Fifth Edition. Blue and black covers. Black sheet name/Special district maps, 1939.

Known small sheet series: 95, 106, 107, 108, 114, 115, 118, 119, 125, 127, 128, 136, 137, 138, 143, 144, 145, 146.

Known large sheet series: 93, 94, St Albans ('new' sheet 95), 102, 111, 112, 113, London ('new' sheet 114), 129, 130, 131, 132, 139, 140, 141, 142.

**27.1** A51 signpost. Quarter-inch Fourth Edition. Series sheets. 1934.

It is thought that all numbered sheets (England & Wales 11 sheets numbered 1-4, 6-12; Scotland 8 sheets in 7 numbered 2-7 and sheets 8 & 9 combined) were printed with both G.R. arms and E.R. arms (apart from possibly E.R. arms for the combined sheet for Scotland).

**28** Three in a Tourer. England & Wales/Scotland tourist maps.

Known (believed complete): Deeside; Dunoon & Firth of Clyde; Dunoon and The Clyde; Isle of Wight; Lake District; Lower Strath Spey; New Forest; Oban; Rothesay and Firth of Clyde; The Trossachs and Loch Lomond.

**29** Black Car in Profile. England and Wales Popular Edition district/tourist maps. England & Wales/Scotland Third Edition district maps.

Known: Aberdeen; Aldershot (South); Brighton; Cambridge; Dorking; Dorking & Leith Hill; Folkestone; Glasgow; Hastings & Bexhill; Hertford; Hertford & St Albans; Ilkley; Ipswich; Ipswich & Felixstowe; Lake District; London (North); London (South); Maidstone; Manchester; Newquay; Rugby; St Albans; Salisbury Plain; Sidmouth; Staffordshire Potteries; Weston super Mare; Winchester; Worcester; Worcester & Malvern; Wye Valley; York.

**30** Hiker at Stile. England & Wales Third/Popular Edition district maps; England & Wales/Scotland Popular Edition tourist maps.

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<sup>8</sup> *A Guide to the Ordnance Survey one-inch Fifth Edition*. Charles Close Society, 2000.

Known: Bexhill and Eastbourne; Birmingham and Wolverhampton; Blackpool District; Bolton, Bury and District; Derby District; Dorking & Leith Hill; Forest of Bowland; Hastings; Hastings, Bexhill and Eastbourne; Hertford & St Albans; Huddersfield District; Invergordon to Loch Ness (Tourist Map); Ipswich & Felixstowe; Leeds District; Leicester District; London (South); Maidstone & Tunbridge Wells; Manchester District; Norfolk Broads (mounted on Ipswich and Felixstowe). North East Wales; North Staffordshire; Rugby District; Sidmouth, Budleigh Salterton and Exmouth District; Southampton and District; Weston super Mare and District; Winchester; Winchester District; Worcester & Malvern District.

Messenger (1988) reports the cover entitled Winchester for this type of cover.

Bender covers. Known: Derby District; Forest of Bowland (also known with label Blackpool & District); Leicester District; Maidstone and Tunbridge Wells.

**73** Six-inch Town maps, 1920-24. 21 town maps. Source: *Sheetlines* 6,13 and *Sheetlines* 7,13.

Known (believed complete): Cambridge; Canterbury; Cheltenham; Colchester; Dundee; Gloucester; Ipswich; Keighley; Kingston upon Hull; Leeds; Leicester; Lincoln; Northampton; Nottingham; Oxford; Plymouth; Portsmouth; Southampton; Southend-on-Sea; South Shields; Wolverhampton.

Known with spine title: Cambridge; Cheltenham; Colchester; Gloucester; Keighley; Kingston upon Hull; Leeds; Leicester; Northampton; Nottingham; Oxford; Portsmouth; Plymouth; Southend-on-Sea; South Shields; Southampton; Wolverhampton.

Known without spine title: Canterbury; Ipswich; Lincoln; South Shields; Wolverhampton.

Spine title unknown: Dundee.

*Thanks to Graham Cornell, John Davies, Peter Gibson and Rob Wheeler for their help in the preparation of this article. Remaining errors are those of the author.*

The online map cover collection at [www.charlesclosesociety.org/coversintro](http://www.charlesclosesociety.org/coversintro) is an ongoing project to portray as many Ordnance Survey map covers as possible.

An extended version of this article identifying map cover titles will be posted on the website to accompany the images.

Contributions of images and information are invited. Please send submissions to the editor by post or email.



## ***Early work of the Ordnance Survey in and near Ivybridge***

***Victor Abbott***<sup>1</sup>

### ***Introduction***

There are many old maps of Devon;<sup>2</sup> 1500 maps are listed in a carto-bibliography.<sup>3</sup> Yet, for many, the Ordnance Survey represents the standard mapping source. It has been a force in the land since William Roy (1726-1790) mapped Scotland (1747-55) following the Jacobite Rebellions (1715 and 1745), and his work continued in the United Kingdom directly into the organisation we know today. His work to connect Bradley's Transit at Greenwich Observatory to the Paris Observatory (1783-84) used new instruments, a precisely measured baseline at Hounslow Heath, and precisely measured triangles with observations at each apex.

The Ordnance Survey maps were also built on triangles, observed from 1791 by William Mudge (1762-1820), Thomas Colby (1784-1852) and others. This triangulation framework was the principal enhancement in rigour over earlier maps, enabling significant improvements in scale and orientation impossible before. This was true over small areas (and can be seen in direct comparison with other early maps), and over large areas (enabling a homogeneous, national map across England, Wales and Scotland). Only a centrally funded operation could provide such a framework.

Mudge's work included observations near Ivybridge, a small town on the south side of Dartmoor, on the Exeter to Plymouth road. It is a crossing point of the River Erme and a convenient hill lies just two miles to the north. Of local interest is:

- i) a Primary Triangulation point (1795), on a hill to the north of the town;
- ii) this point, "Butterton Hill", was used to establish a meridian;
- iii) the meridian and its perpendicular were used in the construction of the local maps;
- iv) an early (prior to 1860) Benchmark on the new bridge, itself built as a result of the Turnpike Roads developments, was used for a levelling run up to the triangulation point.

Thus, for a small town with a nearby hill, by chance in about the right place to fit the overall plan of triangulation, and of a height to enable views to other significant features, there is a significant place in the Primary Triangulation, the Old Series one-inch mapping, and the Principal Levelling.

William Mudge came from Plymouth and there are further local connections. Two of Mudge's co-workers, Simon Woolcot (1760-1819), mathematician and surveyor, was born in South Molton, and Robert Dawson (1771-1860) was born in Plymouth. Mudge's successor, Thomas Colby, is also part of this tale, and under

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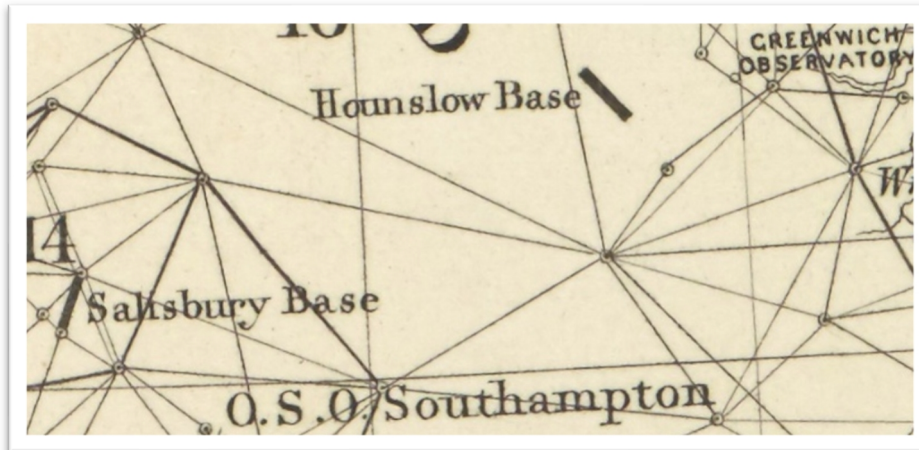
<sup>1</sup> The author was a hydrographic surveyor for ten years then an academic for thirty, employed most recently by Plymouth University.

<sup>2</sup> E Waldron, *Mapping the County*, [www.devon.gov.uk/mappingthecounty2013.pdf](http://www.devon.gov.uk/mappingthecounty2013.pdf), 2013; K Batten and F Bennett, *Printed Maps of Devon, 1575-1837*, [www.printed-maps-of-devon.eu/074t.php](http://www.printed-maps-of-devon.eu/074t.php), 2012.

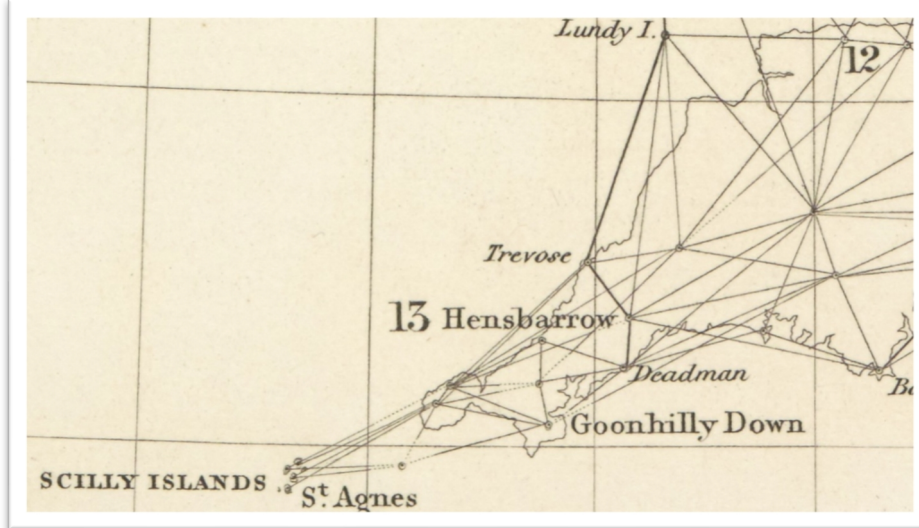
<sup>3</sup> Mary Ravenhill and Margery Rowe, *Devon Maps and Map-Makers: Manuscript Maps before 1840*, Volumes I & II, Exeter, Devon and Cornwall Record Society, 2002.

him was William Yolland (1810-1885), son of a land agent to Lord Morley. Yolland was significant in the survey of Ireland and reported to Parliament; later he became Chief Inspector of Railways. Robert Dawson's son, Robert Kearsley Dawson (1798-1861) worked with the OS under Colby.<sup>4</sup> Ravenhill and Rowe gathered a short list<sup>5</sup> of surveyors abstracted from 273 known Devonian land surveyors and cartographers with their job titles and other activities.

### **Triangulation**



*Figure 1, showing the baselines at i) Hounslow (here with no indication of the connecting lines which were observed to form the triangles); and ii) a check base on Salisbury Plain.<sup>6</sup>*



*Figure 2, showing the connection to the Isles of Scilly.<sup>7</sup>*

The rigorous mapping of the United Kingdom (which included Ireland from 1801) was built on Mudge's (and later, Colby's) triangles and then infill mapping. The Interior or Topographical Survey, based (as was Mudge) in the Tower of London, came to fill in the detail between the triangles. Led by James Gardner and supported by artillerymen, they both

established smaller triangles within the national framework but also used compass and perambulator to capture the everyday objects, just as William Roy had done in Scotland.<sup>8</sup> However, because their work fitted into this new framework of large triangles, the maps had rigour. Comparisons with a prize-winning Devon

<sup>4</sup> K Batten and F Bennett, 2012, *op cit*.

<sup>5</sup> Mary Ravenhill and Margery Rowe, 2002, *op cit*.

<sup>6</sup> Peter Mercator, licensed under the Creative Commons Attribution-Share Alike 4.0 International licence, being a scan by Peter Mercator from a report on the principal triangulation of Britain, 1860, 2010.

<sup>7</sup> Peter Mercator, 2010, *op cit*

<sup>8</sup> Edwin Danson, *Weighing the World*, OUP, 2006.

manuscript map of only twenty years earlier highlighted the former's errors of an unreliable scale, varying in different directions.

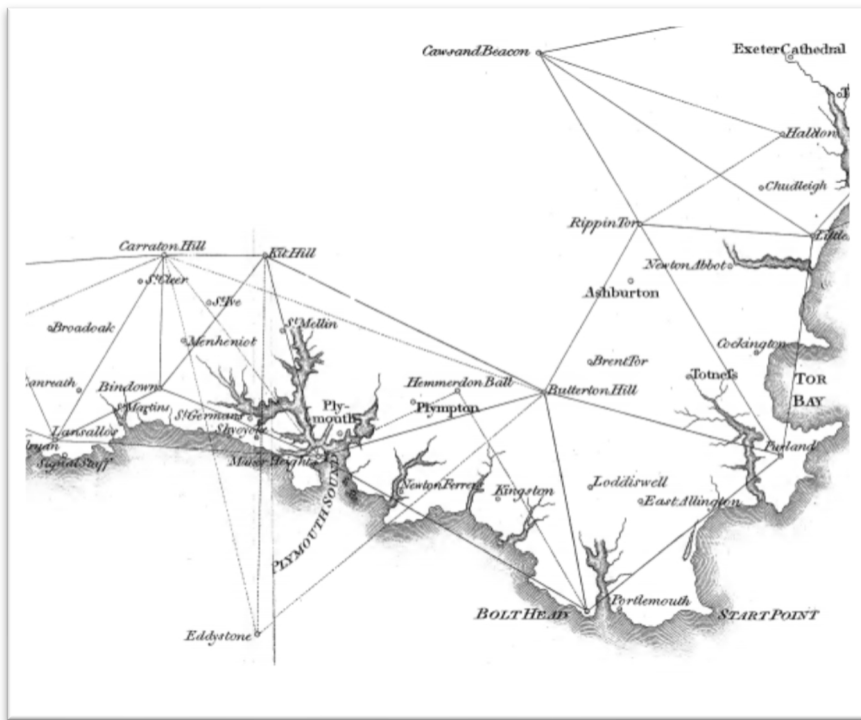


Figure 3, *Plan of the Principal Triangles in the Trigonometrical Survey, 1795-1796.*<sup>9</sup>

Determining the three angles of a triangle establishes its shape but not its size. Scaling of each and every triangle is achieved by measuring one side of one triangle but as adjacent triangles have sides in common, the computed scale carries through the network. Precisely measuring distances greater than 100m was particularly difficult prior to the 1950s. Nevertheless, the initial baseline, measured across Hounslow Heath, was

augmented by two others to act as a check. Measuring baselines was extremely careful work involving Ramsden's Chains and later 18' glass rods, trestle legs, and shade against the elements. Roy measured the Hounslow Base in 1784, Mudge in 1791, and by 1858 it had been measured eleven times. Mudge measured a check base on Salisbury Plain in 1794, at Sedgemoor and others.

From a reconnaissance in 1792, the triangulation was extended from the Hounslow Base (*figure 1*) through to Land's End in 1797 (*figure 2*). In October 1795, Mudge observed directions (*figure 3*) at Furland, determining angles between Butterton (very close to the pillar on the hill now named Butterdon) and Bolt Head and Rippin (now Rippon) Tor. At Butterton he derived five angles from observations to six stations. In 1796, he took further observations to Butterton from Kit Hill, Maker Heights, Bolt Head, Rippin Tor and Carraton (now Caradon) Hill.

The current concrete Butterdon pillar stems from the Re-triangulation of Great Britain but the 1795 point is a nearby mark on the ground. Butterton was also used for a local meridian<sup>10</sup> (this being a North/South line, which in theory extends to the poles), and a perpendicular to this. The latitude of the point was determined<sup>11</sup>

<sup>9</sup> Edward Williams, William Mudge and Isaac Dalby, *An Account of the Trigonometrical Survey, Carried on in the Years 1795, and 1796, by Order of the Marquis Cornwallis, Master General of the Ordnance*, Philosophical Transactions of the Royal Society of London (1776-1886), 1797, 87:432-541; pp436, 437.

<sup>10</sup> RC Wheeler, 'William Mudge and the General Map of England', *Sheetlines* 97, 13-19.

<sup>11</sup> William Mudge, *A Trigonometrical Survey of England and Wales, 1797-1799*, 1801, [https://ia800401.us.archive.org/17/items/bub\\_gb\\_wWcOAAAAYAAJ\\_2/bub\\_gb\\_wWcOAAAAYA\\_AJ.pdf](https://ia800401.us.archive.org/17/items/bub_gb_wWcOAAAAYAAJ_2/bub_gb_wWcOAAAAYA_AJ.pdf).

as  $50^{\circ} 24' 46.3''$  North of the Equator, and the longitude as  $3^{\circ} 52' 47.5''$  West of Greenwich. Mudge chose to observe six meridians spread across southern England at intervals of about sixty miles with Black Down, Somerset to the east, and St Agnes, Cornwall to the west.<sup>12</sup> Being both a geographical latitude and longitude and an orientation, they were used in the drawing of detail on the individual map sheets. Evidence of this process remains in the annotation of the local maps with, “Parallel to the Meridian of Butterson Hill”, although the sheet-lines (the western and eastern edges of the paper maps) are actually not so parallel. Further, the projection (the transformation from the doubly curved surface of the Earth to the plane of a piece of paper is uncertain).<sup>13</sup>

Butterson and the inter-visible stations are given in Table 1.

Butterson	The station is 45 feet S. W. of the Karn, on the hill called by this name, and about 1 mile from Ivy Bridge
Rippin Tor	This station is also on Dartmoor, and about 5 miles from Ashburton. The point is mid-way between the two heaps of stones
Furland	a field near the turnpike-gate between Brixen and Dartmouth. The station is near the stone, erected in the middle of the field
The Bolt Head	The station is on the spot called White Soar, above the Bolt; it is 95 feet in the line produced, north-ward, from the west side of the signal-house, and about 90 feet from the nearest corner of it
Maker Heights	This spot is near Cawsand, and the station is 45 feet from the great flag-staff, in the line produced from Statten Battery passing by the side of the staff
Carraton Hill	This station is about 4 miles north of Liskeard; and the point 150 yards south of the highest Karn on the top of the hill
Kit Hill	The station is on the S.W. bastion of a work, similar to an Indian fortification

*Table 1: Descriptions of early survey stations*<sup>14</sup>

Levels to the sea were obtained at Dunnose (Isle of Wight) and Mount Edgcumbe (now, Cornwall). This latter was also undertaken by the Royal Engineers some years earlier and the values agreed to a foot. Vertical angles of depression or elevation were determined and the height of Butterson stated as 1203 feet.

Butterson New Trigonometrical Station was also used to intersect the points in Table 2, using only one other station.

<sup>12</sup> Brian Adams, ‘Parallel to the meridian of Butterson Hill – do I laugh or cry’, *Sheetlines*, 38, 15-18.

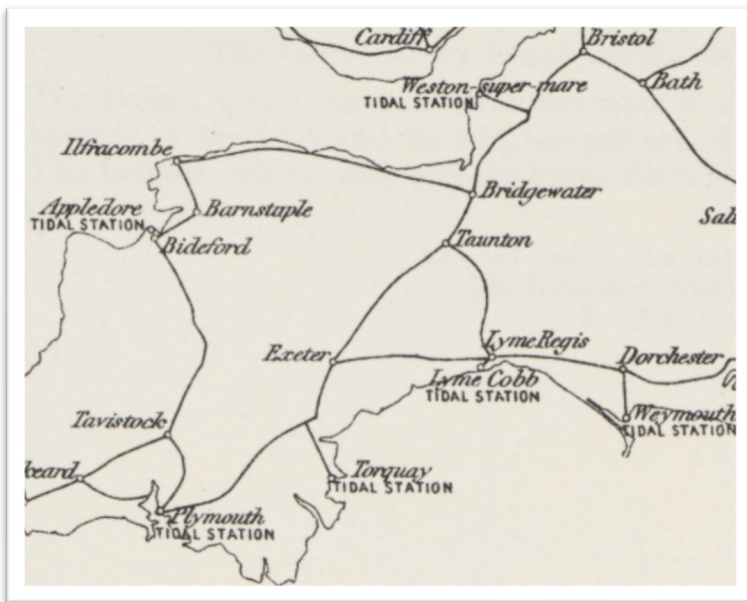
<sup>13</sup> Brian Adams, *Projections of the Ordnance Survey 10-mile maps*, in *Projections and Origins – collected writings of Brian Adams*, The Charles Close Society, 2006.

<sup>14</sup> Edward Williams, William Mudge and Isaac Dalby, 1797, *op cit*.



196	Chudleigh Steeple	197	Naval Signal-Staff at Coletton
198	Naval-Signal-staff, Start Point	199	Marlborough Steeple
200	Naval-Signal-staff, near the Bolt Head	201	Highest Part of the Mewstone
202	Cupola of the Royal Hospital	203	St. Johns Steeple
204	Saltash Steeple	205	Penlee Beacon
206	Plymstock Steeple	207	Statten Barn
208	Mount Batton	209	Flagstaff in Plymouth Garrison
210	New Church Steeple at Plymouth	211	Old Church Steeple at Plymouth
212	West Chimney of the Governor's House, Plymouth Dock	213	Flagstaff in the Fort on Mount Wise
214	Steeple of the Chapel, Plymouth Dock	215	Flagstaff in St. Nicholas' Island
216	Obelisk at Crimhill Passage	217	East Pinnacle on Mount Edgcumbe House
218	Flagstaff on Maker Tower	219	Naval-Signal-staff, near Maker Tower
220	Chestow Steeple	221	Stonehouse Steeple
222	Obelisk at Puslinch	223	Rame Head
303/304	Eddystone Lighthouse [built by Smeaton, stood from 1759-1877]		

*Table 2: Intersected points. The numbering follows Williams et al (1797).<sup>15</sup> The Eddystone Lighthouse, now referred to as Smeaton's Tower, was removed to Plymouth Hoe. Its replacement was required, not due to a failure in the lighthouse, but of the underlying rock.*



Measurements to the Isles of Scilly were taken near Land's End in 1797 to determine their longitude. They found an error of 37km, uncorrected since the loss of Sir Cloudesley Shovell's fleet (1707) and the setting up of the Longitude Prize (1714).<sup>16</sup>

*Figure 4: Part of the Bristol to Plymouth levelling run.<sup>17</sup>*

<sup>15</sup> Edward Williams, William Mudge and Isaac Dalby, 1797, *op cit*.

<sup>16</sup> Edwin Danson, 2006, *op cit*.

<sup>17</sup> Peter Mercator, licensed under the Creative Commons Attribution-Share Alike 4.0. International licence, being a scan by Peter Mercator from a report on the principal lines of spirit levelling, 1860, 2014

## Height

Thomas Colby took over the leadership of the Ordnance Survey in 1820, and the First Geodetic Levelling of England and Wales was undertaken between 1840 and 1860. Of the 184 levelling lines, one passed through Ivybridge (*figure 4*).

The Plymouth Eastern Turnpike (Brent Bridge to Gasking Gate (Plymouth)) had been opened in 1758. The improved route facilitated road transport in south Devon, and made a significant improvement to the town together with the building of New Bridge at Ivybridge in 1834.<sup>18</sup> One of the marks (Benchmark No 319 (Table 3)<sup>19</sup>) is a bolt in the North battlement of New Bridge, 3.79 ft. above the lower surface of the keystone, 197.8720ft (about 60m) above OD Liverpool, 1844 at SX 6361 5623. It can still be seen, partly covered by the brick pavers, on the bridge's centre (*figure 5*). The levelling line from Bristol ended at Devonport Dockyard (Benchmark No 380) and was connected to the zero of the tide gauge.

No. 309.	on South battlement of Railway Bridge at Wrangerton ; 2'59 ft. below top of battlement	3,975	486'734	"	"
No. 310.	on stone post of gate at South side of road, Wrangerton ; 1'68 ft. above surface	2,690	488'899	"	"
No. 311.	on West quoin of South abutment of Skew Bridge, over South Devon Railway, at Wrangerton ; 1'50 ft. above surface	3,813	423'972	"	"
No. 312.	Bolt in North battlement of Bittaford Bridge ; 1'67 ft. below top of battlement, and 1'77 ft. above surface	3,743	399'354	"	24
No. 313.	Mark on East abutment of Railway Bridge, over Turnpike-road ; 2'34 ft. above surface	3,777	402'846	"	"
No. 314.	on top of stone post of gate at South side of road ; 3'30 ft. above surface	2,954	370'768	"	"
No. 315.	on West corner of John Husk's house at South side of road, North Filham ; 2'82 ft. above surface	2,473	349'549	"	"
No. 316.	on boundary stone East side of road, at junction of roads, North Filham ; 1'69 ft. above surface	1,245	313'848	"	"
No. 317.	on stone post of turning-gate at North Filham Turnpike Gate ; 1'05 ft. above surface	1,079	292'060	"	"
No. 318.	on large stone at side of gate, N. side of road, near 11th milestone ; 1'70 ft. above surface	2,210	273'059	"	"
No. 319.	Bolt in North battlement of New Bridge, over Erme River, at Ivy Bridge Village ; 3'79 ft. above lower surface of keystone	2,569	197'872	"	"
No. 320.	Mark on West pier of gate at North side of road to Mr. Cotton's house, Ivy Bridge ; 0'96 ft. above surface	1,539	169'014	"	"
No. 321.	on end of wall joining outhouse at North side of road, near the 10th milestone ; 1'90 ft. above surface	3,478	155'470	"	"

Table 3: A record of the First Geodetic Levelling with No 319, New Bridge.<sup>20</sup>

Figure 5: Benchmark 319 on the New Bridge, Ivybridge.

The New Bridge mark was unusual in being used for a side line of levels up to Butterson New Trigonometrical Station. From Bristol to Plymouth there were 8 lines of side levelling, four being to trigonometrical stations (Staple Hill, Taunton; Ryder's Hill, Buckfastleigh; Ugborough; Butterson).



<sup>18</sup> Ivybridge Heritage and Archives Group, 2017, <http://ivybridge-heritage.org/bridges-and-bridge-ceremony/>.

<sup>19</sup> Henry James, *Abstracts of the Principal Levelling Lines of Spirit Levelling in England and Wales*, Ordnance Survey, [www.deformedweb.co.uk/trigs/data/1GL/1GLA\\_074.png](http://www.deformedweb.co.uk/trigs/data/1GL/1GLA_074.png) and [www.deformedweb.co.uk/trigs/data/1GL/1GLA\\_084.png](http://www.deformedweb.co.uk/trigs/data/1GL/1GLA_084.png), 1861

<sup>20</sup> Henry James, 1861, *op cit*.



*Figure 6: The Bench Mark at 1,196.9 feet above Ordnance Datum Liverpool.<sup>21</sup> Rather than a horizontal cut mark, there is a chiselled circle.*

The Butterton mark has a value of 1203.2440' above Ordnance Datum Liverpool 1844.<sup>22</sup> The intervening 1000 feet was levelled up hill, with 15 marks along the road to the railway bridge and on up

over the moor (*figure 6*). On the nearby, more recent Butterdon concrete pillar the modern vertical framework is on one side: a benchmark as a metal plate, a Flush Bracket, numbered (S3429) and referenced to Newlyn Datum. The level line may have continued across the moor over Ugborough Beacon (1233.6', which also had a Trigonometrical Station by at least 1886), to Peek Moor Gate, then turned South West to close out on the Principal Levelling Line at Wrangaton (east of Ivybridge).

From the First Geodetic Levelling, benchmarks used the broad arrow design, sometimes with a circular mark, often with a horizontal line for the referenced height. At New Bridge, the latter incorporates a bolt (now well-worn) within the horizontal line (*figure 5*).

Not all benchmarks from the 1840-60s have survived, with the railway crossing north of the town at Stowford Bridge (established by 1848)<sup>23</sup> being the most obvious. On the 1885/7 OS mapping, the Benchmark is clearly shown on the centreline of the railway and this matches with the description. However, the railway is Brunel's original 7' 1/4" gauge (1838-1892; change of gauge in the Plymouth area, 1892). The railway line was originally single track being doubled in 1893 (but only connected with the replacement of the viaduct in 1894)<sup>24</sup>. By the time of the 1905/6 mapping, the line is shown doubled and is standard gauge. The bridge must have changed to the present cast iron structure. The Benchmark has gone.

### **Summary**

The story here is not unique but repeated across the whole country. Yet it has been interesting to find the reasons for the local activities, discover their locations, and find the context in which they took place. I am still finding Benchmarks chiselled into the native rock on Dartmoor and working further on discovering the quarries and stone for the Turnpike and for early buildings.

<sup>21</sup> Photos by 'Grimspound and Jem' from the website [www.waymarking.com](http://www.waymarking.com)

<sup>22</sup> Bench Mark Database, <http://www.bench-marks.org.uk/bm79121>, 2017.

<sup>23</sup> ET MacDermot, *History of the Great Western Railway*, Volume 1 1833-1863, London, Great Western Railway, 1927.

<sup>24</sup> Wikipedia\_Disused\_Railway\_Stations, [https://en.wikipedia.org/wiki/Disused\\_railway\\_stations\\_on\\_the\\_Exeter\\_to\\_Plymouth\\_Line](https://en.wikipedia.org/wiki/Disused_railway_stations_on_the_Exeter_to_Plymouth_Line), 2017.



## ***Merely clarifications***

***David E.M. Andrews*<sup>1</sup>**

I have received a couple of queries following the publication of Michael Spencer's article 'Mere questions' in *Sheetlines* 110, pages 14 to 17.

### ***Query 1***

Reading the article, 'Mere questions' I feel that some clarification is called for on "Und" and "Def"; and since the author is quoting your article,<sup>2</sup> it would be best if it came from you. The problem is that the definition you quote of "Und" in your article in *Sheetlines* 103 has evidently been written by someone who does not give the same attention to the words he writes as would, say, a mathematician or a lawyer. As the OS used the term, it appears to me to mean that the boundary is not related to a feature *it runs on or alongside*, nor has there been such a feature *since the First edition of the large-scale survey*. Obviously, it is related in some way to more distant detail, otherwise its course could not have been surveyed; obviously too, the OS is not making any statement about the absence of mediaeval (or even Iron Age) features that the boundary might once have followed. Likewise, "Def" relates to defacing since the First edition.

### ***Answer***

The point about the mereing "Und" is that, at the date specified in the administrative order from which a new boundary comes into effect, (the "Appointed Day"), there was no physical feature in existence on the ground to which the boundary could be mered. If there had been a physical feature in existence at the "Appointed Day", but it had been removed or demolished by the time that the surveyor was on site to mere the boundary, then the mereing would have been "Def".

In practice the surveyor, finding that there was no physical feature in existence at the time of his visit, would have made enquiries with people, (usually the landowner(s)), who might know whether or not there had been a physical feature in existence on the "Appointed Day", and mere the boundary accordingly.

With regard to "mediaeval", Iron Age" and other ancient boundaries I must confess that I do not know how the surveyors of the First edition OS large scale maps decided between "Und" and "Def" when there was no administrative order to refer to. I suspect that the lack of a physical feature adjacent to existing boundaries at the time of the surveyor's visit for the survey of the First edition large scale map resulted in a mereing of "Und" because the use of "Def" would imply the existence of a previously mapped physical boundary feature.

Incidentally, the quote referred to is not mine. It is the wording from "*Public Boundaries and Ordnance Survey, JRS Booth MBE, Ordnance Survey, 1980*". Booth is considered to be the authority on the subject of boundaries and OS mapping, but he was not a lawyer and when he wrote, "*never has been*", we probably have to understand that he actually meant, "*while the boundary has been in existence and has been mapped at large scale by the Ordnance Survey*".

<sup>1</sup> The author is a retired Ordnance Survey Chief Surveyor.

<sup>2</sup> 'Merely a question of boundaries', *Sheetlines* 103, 31-39.



## Query 2

Is there a difference of substance between “C Tk O C R” and “O C R” or is it just a change in standard terminology?

## Answer

As far as I am aware the two mereings “C Tk O C R” and “O C R” fell out of use in the late nineteenth century. The more modern mereings which replaced them are “Tk R”, (*Track of River*), where the old course of the river still can be seen on the ground but there is no water in the “Track”, and “C O C R”, (*Centre of Old Course of River*), where there is still a water filled portion of the old river, but the main alignment of the river is now in a different location.

A few more things arising from the article in *Sheetlines* 110, tackled in the order in which they are mentioned in the original.

1. “Cop” is defined in *Booth* as “*Usually a raised bank; sometimes a hedge bank and sometimes the central ridge of a butt of ploughed land i.e. a raised section of land*”.
2. A boundary line between boundary posts or stones is not necessarily a straight line, and Ordnance Survey practice is that it is mered “Und” disregarding the existence of any boundary posts, stones or other markers. Any other mereing, (such as “SLS”), would have to be changed to “Def” if one or more of the boundary posts/stones/markers were removed, giving the impression that the boundary had been previously mered to a feature depicted on an earlier edition of the map.

An “Und” boundary can arise in two ways;

1. the Order-making authority had intended the boundary to be mered to a physical feature, but that feature had been removed or demolished before the “Appointed Day”.
2. the Order-making authority intended the boundary to follow the alignment that they had drawn on a map, and which did not follow any physical feature on the ground.

A boundary mered “Und” will forever remain as “Und” until such time as the boundary becomes obsolete and it is deleted from the map.

3. *Booth*, following the Public Health Act 1872: 35 & 36 Vict C79 (10 August 1872), defines a “Union” as “*a union of parishes incorporated or united for the relief or maintenance of the poor...and includes any parish subject to the jurisdiction of a separate Board of Guardians.*” In apportioning boundary symbols to the boundaries depicted on the map Ordnance Survey would have needed an enormous number of discrete symbols to have covered all the possible combinations and permutations of boundaries in existence. In the example provided at Figure 3 of ‘Mere questions’ the boundary symbols depict the County and Parish boundaries dividing Roxburghshire, Cumberland and Northumberland. The fact that they are also “Union” boundaries is indicated by

the addition of the text “Union By.”. The “x”s along the boundaries indicate that they are also boundaries of Superintendent Registrars’ Districts.

4. The point made about how the owner of parcel 1969 comprising 0.649 acres manages to access his land assumes that the parcel remained in the same ownership after the railway had been constructed. It is probable that a transfer of the land to new ownership was negotiated between the railway company and the affected landowners so that the parcel and the land to the south east of it were henceforward in the same ownership. There is no reason why a landowner cannot own land on both sides of a national boundary!

And finally, two additional points for us to ponder.

Gates, stiles and doors are considered to be part of the wall/hedge/fence to which they are connected, and gates, stiles and doors have never been separately depicted on OS 1:2500 scale mapping. It was down to the surveyor’s judgement whether small gaps in physical boundary features resulted in the feature being described as “Broken” and depicted by a pecked line on the map. A boundary mered to a “Broken” feature would retain the same mereing as if it was an unbroken feature. Larger gaps in the physical boundary would result in a mereing of “Def” for the sections where there was no physical boundary.

In Figure 4 of the article ‘Mere questions’, why is the boundary not “Def” where it crosses the railway north east of the S.P.? It should only be correctly retained as “C Tk O C R” if the old course of the river was still discernible where it actually crossed under the railway; a somewhat unlikely situation! I would have been inclined to mere a short section of the boundary crossing the railway north east of the S.P. as “Def”, or alternatively as is the more modern practice, the mereing should have been broken by bracing symbols where the boundary crosses the railway, leaving a short section within the railway fencing with no mereing text.

*By way of clarification, the author of this article always uses the name “David E.M. Andrews” to distinguish himself from another Ordnance Survey Chief Surveyor, “David E. Andrews”. The existence of both individuals caused many instances of confusion, especially when both were working in North Wales!*

**Rob Wheeler writes:** Michael Spencer asks about the ownership of a small piece (0.649 acres) of Scotland cut off by the North British Railway. I do not claim any direct knowledge (and Scottish process may have been different) but in Lincolnshire the matter would have been dealt with when the Railway Company’s land agent was negotiating a price for the land taken by the railway. The erstwhile owner (or his representative) would add to their claim an element for the loss of value occasioned by being left with an uneconomic parcel of barely half an acre on the south side of the railway. The company would either accept this (usually over-stated) loss and pay extra compensation, or it would offer to include the parcel within the land it was purchasing, with the intention of selling it on to an adjoining proprietor. If negotiations broke down, the matter was determined by a jury at Quarter Sessions. Since such juries were composed of local landowners, they tended to take an exceedingly generous view of the value of land taken; hence railway companies tried very hard to reach a negotiated settlement.

***Visit to John Rylands Library Manchester***  
***Bernard Anderson***



The Society visited John Rylands Library in Manchester at the end of January. Although originally an independent library, it now forms part of Manchester University Library. The visit was hosted by Donna Sherman who had arranged for a tour of the building to take place at the beginning of the visit. This also gave the opportunity to provide a brief history of the foundation of the library, a memorial to John Ryland a very wealthy manufacturer of cotton goods by his widow, and its original purpose, housing an extensive collection of bibles and literature particularly relevant to the non-conformist church.

Donna then described the way in which the map collection had been built up and its importance and relevance to current university courses and research. A selection of maps from the university library had been transported across the city for the members to see and inspect. These were in three groups, one to show the range of early and unusual maps held in the library. Included in this selection were an Arabic map of the world dating from the thirteenth century and a copy of the fifteenth century Borgia world map. Also in this group were maps printed on fabric dating from the first world war and distributed by the *Manchester Guardian* and a drink map produced by the temperance movement. In addition to identifying the location of points of sale, the commentary on this map expressed the concern felt about the ease with which intoxicating drinks could be obtained and the shortcomings of the then current licensing arrangements. The second group of maps covered the development of the cities of Manchester and Salford from before the industrial revolution to more recent times including plans to show the expansion of the university and copies of Soviet maps of the area. The final selection was of plans for the development of the Manchester Ship Canal and the dock estate in Salford.

Manchester University has been active in digitising its maps and making these available to the public through its website <http://enriqueta.man.ac.uk/luna/>. Although not part of the university collection, bomb damage maps held in the city archive which have also been digitised were briefly demonstrated.

*Donna Sherman being thanked by  
 CCS Chairman Gerry Zierler*



## **Annual General Meeting**

The 2018 AGM will take place on Saturday 12 May at Tiffin School, Kingston-on-Thames (Grid Ref TQ186693). Parking is available.

10:30	Coffee available
<b>11:00</b>	Talk by Nick Millea: <i>The Historic Towns Trust atlas of Oxford</i>
<b>12:00</b>	AGM proper
13:05	Lunch available
<b>14:30</b>	Map market opens
16:30	Map market closes

### **AGM Agenda**

1. Apologies for absence
2. Minutes of 2017 AGM
3. Matters arising
4. Officers' Reports:
  - a. Chairman
  - b. Secretary
  - c. Treasurer
  - d. Membership secretary
5. Reports from subcommittees:
  - a. Publications
  - b. Archives
6. Election of Officers and Committee for the coming year.
7. Appointment of independent examiner
8. Presentation of Rowley Award
9. Any other business.

R C WHEELER  
Hon Sec, Mar 2018

If you plan to attend, please read the notes overleaf and return the slip, with cheque if appropriate, to Rodney Leary before 1 May.



If you plan to attend the AGM, please read the notes below and return the slip opposite, with cheque if appropriate, to Rodney Leary before 1 May.

- Please indicate that you will attend.
- Please indicate if you require lunch (see menu and price opposite)
- Please indicate if you wish to sell at the map market.
- Please indicate if you wish to buy selected CCS publications at special offer price.

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Kingston rail and bus stations are a short walk from the school. On exiting either, turn left (east) and follow the road until you reach Tiffin School.

Entrance for pedestrians and vehicles is via A308 London Road only. Car parking is in the playground.

On arrival please report to the CCS reception desk, via entrance situated to the left of the main vehicle entrance. There is level or short ramp access to all the venues we will be using.

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Please note there will be no viewing or selling before the map market opens at 14:30.

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If you wish to bring your own food you may use the dining room.

If you have any special requirements or need any further information, please contact Rodney Leary at 18 Downton View Ludlow, SY8 1JF or on 01584 874246

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## ***Roy's map of Minden, 1759***

***R C Wheeler***

Throughout the eighteenth century, and indeed beyond, there was tension in this country between those who favoured a 'blue water' war strategy, and those who favoured continental engagement. Popular opinion tended to side with the former: there was a good chance of picking up a lucrative West Indian island or two which might, with luck, be retained at the end of the war. In contrast, large armies fighting in Europe were expensive; but from George I onwards the Kings of England were also Electors of Hanover and did not like to see their lands overrun by the French.

In the Seven Years' War (1756-63), the continental option was particularly tough: as a result of poor diplomacy, Great Britain found itself fighting both Austria and France with Prussia as its only significant ally. What this meant was that the Prussian forces under Frederick the Great engaged Austria, while an army that was largely Hanoverian, along with forces from some minor German states and a reluctantly-provided British component, tried to hold off a larger French force.

The commander-in-chief of this Hanoverian-cum-British force was Prince Ferdinand of Brunswick. An officer in the Prussian army, and brother-in-law to Frederick the Great, he had been appointed to command the Hanoverian 'Army of Observation' after its previous commander, the Duke of Cumberland, had been forced to surrender. Politically astute, he had insisted that he should report direct to King George (or Prince-Elector Georg, to be pedantic). He had studied the profession of arms and had a good grasp of the higher levels of warfare. He was an inspiring leader, able to turn a dejected and defeated mass of troops into a disciplined and confident army. On the other hand, he lacked experience of high command, and this showed in his conduct of battles: he knew what he wanted his troops to do but either he failed to get them in position soon enough, or failed to convey clear orders to his subordinate generals.

The British component commander was Lord George Villiers, third son of the Duke of Dorset. Like Ferdinand, he took his duties seriously, but lacked experience of high command. He too was focused on the wider political game but lacked maturity of judgement; since he reported to the British government, whilst Ferdinand reported to the king, this was a serious failing. Finally, he seems not to have been good at personal relationships with his equals or his superiors. To be honest, he was unsuited for the job: he had originally been sent out as second-in-command to the 3rd Duke of Marlborough, but the latter had died and Lord George had stepped into his shoes.

The first half of 1759 had not gone well. Ferdinand had been pushed back northwards by the larger French force under the Marquis de Contades. He had been forced to choose between sacrificing his connection to England or to Prussia and had decided the latter was more important to him. By mid-July, the French had taken the fortress of Minden; any further retreat by Ferdinand would involve the loss of his supply depots and lead to defeat. The French force was

temporarily split, with an element under the Marquis d'Armentières besieging Münster and Lippstadt, but once the forces had been reunited, Contades could be expected to resume his advance. It was essential for Ferdinand to fight a battle before that happened. The problem was that the French army was drawn up in front of Minden and behind the River Bastau, which was modest enough as a river, but not an obstacle an army could attack across except against a decidedly inferior force.

Under this pressure, Ferdinand conceived a daring plan. He detached a force to cut around to the rear to threaten Contades' supply line. He moved his main force a couple of miles to the right, giving the impression he was about to support this rearward hook. His left wing under Wangenheim remained in front of Minden but pulled most of its men back from their field fortifications, holding them on a reverse slope out of sight of Minden. The intention was to offer Contades the apparent chance of an easy victory and lure him out from behind the Bastau; the main force would then spring the trap.

It worked – in part. The French crossed the Bastau in the night and attacked Wangenheim, only to find his position a lot stronger than they had supposed. The trouble was that Ferdinand, who had an obsession for secrecy, had not told his subordinates of his plans. French deserters had come in and reported that the French army was moving, but the general dealing with them had not thought it worth telling Ferdinand until dawn. Consequently, the main force moved late and in a disorganised manner. The central block of infantry, under von Spörcken, was ordered 'to advance, with drums beating, and attack whatever it might encounter'. At least, that is what it did; there was dispute about the exact wording of most of Ferdinand's orders. The main part of that force was British and did exactly as ordered, advancing somewhat at an angle to the main axis, forming a very vulnerable salient, attracting artillery fire from the flank and withstanding two charges from the French cavalry who formed (unusually) the French centre. It suffered something like 30% casualties and yet, showing remarkable discipline and resolve, it remained an effective fighting force. The French cavalry, having failed with their charges, broke; and the whole French force retreated behind the Bastau. It was a signal victory, but not an overwhelming one.

Lord George Sackville had been in tactical command of the cavalry of the right wing. Ferdinand took the view that a more effective pursuit by them might have resulted in a massive French defeat. Arguably he was right; arguably Ferdinand's own fumbling and contradictory orders to Sackville had actually prevented that pursuit. Or perhaps Ferdinand had cynically decided that Sackville had to be replaced as British component commander and he now had an opportunity. He issued a remarkable general order declaring to the Marquis of Granby (Sackville's second-in-command) 'that if he had had the good fortune to have him at the head of the cavalry of the right wing, his presence would have greatly contributed to make the decision of that day more complete and more brilliant'. It made Sackville's position untenable. Sackville made matters worse by an ill-judged response, he was recalled to London, and dismissed by the King from all his posts. Stung by accusations of cowardice, he demanded a court



martial: it opened on 29 February 1760, with Sackville facing the capital charge of disobedience of orders.<sup>1</sup>



*Extract of Roy's map showing the dedication, from the image on Yale University Beinecke Rare Book & Manuscript Library website ©*

On that same day, William Roy's map of the battle was published in London, by Thomas Major. A version in French, arranged differently but with the same content, was engraved by Jacob van der Schley.<sup>2</sup> It was perhaps produced with the German market in mind: the upper classes there generally spoke French; for

<sup>1</sup> For an account of the battle, see Piers Mackesy, *The Coward of Minden*, 1979, and Stuart Reid, *The Battle of Minden*, 1759, 2016. Both draw heavily on the official account, *Proceedings of a General Court Martial Held at the Horse Guards ... upon the Trial of Lord George Sackville*, (Edinburgh, 1760) which is available gratis at [books.google.co.uk](http://books.google.co.uk).

<sup>2</sup> Van der Schley also engraved a smaller plan of the battle by Capt Friedrich Wilhelm von Bauer.

example, Prince Ferdinand's correspondence with Frederick the Great is all in that language. The map is famous as the first English map to use *papillons* (flaps) to indicate successive positions. The English version is available on-line at <https://brbl-zoom.library.yale.edu/viewer/15479957>. The French version is available at <http://digitalarchive.mcmaster.ca/islandora/object/macrepo%3A81544>; this site has two images, one with the flaps digitally removed and one with the flaps in place.<sup>3</sup>

The map is dedicated to His Serene Highness Prince Ferdinand. It is said to have been paid for by him.<sup>4</sup> It was referred to in the court-martial. Lord George, to establish whose infantry he had been drawn up behind, uses the expression: "if we can credit the plan of Lieut. Roy, so much relied on", which appears to be a rather grudging admission of its probable accuracy, notwithstanding it being in effect a product of the prosecution. Had this been a court of Common Law, Roy would have been sworn as a witness and we might expect him to have been asked how he came to produce the map, in order to establish its reliability; but a court martial was not a court of Common Law, and so we are left in ignorance.

However, one can learn a lot from the map itself. It shows the exact routes followed by each of the eight columns comprising the army for a period of two weeks leading up to the battle. It shows the move of the main force to the right, but the enormously long text does not explain its rationale. As for the locations of forces, the '1st Position of the Allied Army' shows a tidy line of departure that never existed except perhaps in the mind of Prince Ferdinand. The '2nd Position of the Allied Army' shows the manner in which the central block of infantry under von Spörcken ended up as a salient projecting ahead of the rest of the army. This only appears when just one of the two flaps is down.<sup>5</sup> The same view also shows a '2nd position of the cavalry of the right wing', with a long line of cavalry drawn up facing the French. The only trouble is that the middle of the line is in a wood. Militarily this is a nonsense. What had actually happened is that the cavalry had previously been on the right of the wood; they had been ordered by Prince Ferdinand to move through the wood to support the infantry of the centre. Since they could only move through the wood in single file, this inevitably took time; and, because of ambiguity in the wording of the orders as transmitted, there was a suggestion that the Hanoverian cavalry should remain to the right of the wood. So, either Roy was struggling to reconcile different officers' reports of where they were at the time in question, or else he understood that the units were moving across but thought it more noble to draw them all facing the French.

These peculiarities probably did no harm to the map's sales. The lines of small dots enabled thousands of families to trace the path their loved ones had taken;

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<sup>3</sup> Ashley & Miles Baynton-Williams, *Maps of War*, 2007, reproduces a variant of this published by [Pieter] de Hondt. Within the neat line, it appears identical. De Hondt and Schley are known to have been closely associated.

<sup>4</sup> Dublin Courier, 30 April 1760.

<sup>5</sup> There is a somewhat poor-quality image at <http://www.mapforum.com/15/mindmid.jpg>



and Roy's praise for the conduct of the British infantry - "notwithstanding ..., notwithstanding ..., notwithstanding ..., such was the unshaken firmness of those troops that nothing could stop them;" - was no doubt much appreciated by purchasers. It is nevertheless instructive to consider how these peculiarities might have arisen.

Lines of dots to indicate routes taken were a feature Roy will have known from maps of the Scottish campaign;<sup>6</sup> but those routes were diagrammatic in nature. In contrast, the routes on Roy's maps are carefully related to the topography: the artillery travel whenever possible on roads; even modest rivers are crossed by bridges; and the routes are kept far enough apart to allow the whole army to move without mutual interference between adjacent columns. These differences reflect the reality of continental battles. The routes were known as 'avenues' or *débouchés*. Ferdinand ordered his subordinate generals to familiarise themselves with them in advance: not, let it be noted, to *plan* them in advance but to *acquaint* themselves with the routes that had been laid down for them to follow. The planning of such routes was the responsibility of the quartermaster-general's department; and Roy, it will be recalled, was one of the assistant quartermasters-general. That planning will almost certainly have been done using a detailed topographical map. Of course, if no map was available and there was no time to draw one, a group of assistants might have managed to do the job on the ground; but the need to plan ahead for the parallel crossings of the next stream, to avoid areas of marsh or scrub, would have made a trial-and-error method liable to give unsatisfactory routes or to take excessive time.

Returning to Roy's published maps, one finds that the topography is shown in great detail, even a long way back from the battlefield where it was of no importance for understanding the events of 1 August. Had the victorious army been encamped before Minden for a couple of weeks after the victory, there might have been ample time for Roy to survey irrelevant features; but the army moved south on 4 August, and the quartermaster-general's department must have been busy in the intervening period, not least in preparing the orders for that move. What, then, was the source of the topographical detail on Roy's map? I suggest he used the very map on which the various moves of the army since 14 July had been plotted. This would of course have required the consent of Prince Ferdinand, but as he was sponsor of the map this was presumably not a problem. Thus it would appear that what Roy gives us is a quartermaster-general's view of the battle, and quartermasters-general were expected to concern themselves with nitty-gritty matters like routes and intelligence rather than strategy. Given that Ferdinand did not tell his subordinate generals that he was creating a gap in his

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<sup>6</sup> Carolyn J. Anderson *Constructing the Military Landscape: The Board of Ordnance Maps and Plans of Scotland, 1689–1815*. Available at <https://core.ac.uk/download/pdf/280200.pdf>. Such lines of dots were part of the standard vocabulary of battlefield maps. One would not expect to see the detailed mapping of *débouchés* for any of the battles against the Scottish rebels, but one might expect to find it for more of the set-piece continental battles. However, scanning the Baynton-Williams' book failed to yield any more examples.

line in order to lure the French out, it is highly improbable that such knowledge was vouchsafed to mere assistant quartermasters-general: they would have been told who was to be moved where and expected to get on with organising it.

Whilst the route-planning map may have served as a basis, it will have needed augmenting with the various positions of units during the battle itself; but this could have been done some time after the event by asking officers from those units. That would explain the deficiencies of Roy's map in this regard.

These strengths and limitations actually helped Roy politically. His map was largely an uncontroversial statement of the basic topographical points. The prosecution saw no need to call him as a witness; and the defence accepted his map, if somewhat grudgingly. He was useful to the one party without making himself obnoxious to the other. In 1760 he was made deputy quartermaster-general of the British forces in Germany; in 1761 he was made Major of Foot and deputy quartermaster-general of forces in South Britain.<sup>7</sup> His career was made; and he was firmly set on the path to becoming a Major General and a luminary of the scientific establishment.

Of his final period in Germany, we know little. He will have been reporting to the Marquis of Granby, who had replaced Sackville as the British component commander, a man noted for his concerns about the welfare of his troops but who could be relied upon to take no interest in the higher matters that Prince Ferdinand liked to keep to himself. Roy presumably retained the trust of Ferdinand: he done a sound job with his map, stating (perhaps *improving upon*) the facts, while not revealing anything that might have displayed Ferdinand's tactical fumbling. As the man responsible for a best-selling map, he may be presumed to have gained the respect of continental cartographers. And he at last had time to develop a proper understanding of the continental perspective on military cartography, something that had probably been impossible during the hectic series of retreats that led up to Minden.

This continental perspective on cartography needs some consideration. Evidently the commander-in-chief needed a medium-scale map (say at 1:200,000) for planning his moves, a map that at the very least showed where rivers could be crossed. He also needed a large-scale map (say 1:50,000 or 1:25,000) for deciding where he would fight his battles, a map that would show where his flanks might be protected from cavalry by woods or marshes. Maps at this scale could always be surveyed as and when they were needed, but that wasted time; and time, as Ferdinand knew only too well, was a precious commodity. Commanders could, and often did, manage without maps altogether, but with a significant penalty.<sup>8</sup> Those large-scale maps would also serve the quartermasters-general for the detailed planning of *débouchés*. For most purposes, a single copy of these maps would suffice. It is noticeable that at Minden the subordinate generals saw no maps, except for Prince Schaumburg-Lippe-Bückeburg, who

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<sup>7</sup> JB Harley, "William Roy and the Ordnance Survey map after 200 years", *Chartered Surveyor*, Jan 1978.

<sup>8</sup> Christopher Duffy, *The Army of Frederick the Great*, 1974, 143.

commanded the artillery. Perhaps artillery commanders were thought to need their own map for planning lines of fire; or perhaps the Prince was one of the few men Ferdinand trusted with a map. (Incidentally, one of the British artillery officers had seen his map and thought it better than Roy's in showing the density of the wood that lay to Sackville's left and was topographically the most important aspect of the court martial;<sup>9</sup> but there were no standard cartographic conventions for showing the penetrability of a wood and if the impression given by the map the witness had seen was different from that which he gained from Roy's engraved map, it does not imply that the maps used different sources.) Thus, ideally, large-scale maps should be available in advance; and ideally they should be hung on a proper triangulation rather than being constructed – like Roy's survey of Scotland – from a series of traverses.

This understanding of the requirement can be seen from developments in Prussia. Notwithstanding Frederick the Great's deep distrust of large-scale maps, Count Samuel von Schmettau (1684-1751) had conducted a triangulation of Prussia's new territories; and his son, Friedrich Wilhelm Carl von Schmettau (1743-1806) would map them at 1:50,000.<sup>10</sup> Compared to the work of the Cassinis in France, the Prussian maps were cheaply surveyed, with cruder instruments used for the triangulation and a willingness to use existing large-scale maps (especially of forests) rather than completing a fresh survey; but arguably the carefully coloured MS maps that resulted were of greater utility to a commander in the field than the printed French maps at 1:86,400.

Why is this relevant to the Ordnance Survey? Well, in 1763, immediately after the end of the war, Roy put forward his first proposal for a general survey of Great Britain. Details do not survive, but it is generally presumed to be along the same lines as the one he put forward in 1766.<sup>11</sup> This was to be based on a series of triangles, run along the coast and 'remarkable ranges of hills and principal rivers'. The topography was to be derived where possible from existing county maps. The scale was to be one-inch or an inch-and-a-quarter to the mile. Note that the last is almost exactly 1:50,000. All this is closer to German thinking than to French.

To see the final stage of German-style cartography in England, one should look at the map reproduced as the frontispiece to the first of the Margary volumes.<sup>12</sup> The scale is now six inches to the mile, but what is striking about the map is the contrast between the green of the marshes and the pasture closes – unsuited for cavalry – and the buff of the arable open fields, well-suited for set-piece battles. There is lots of extra detail, but in conception it is similar to the Schmettau maps. These splendid maps were to be compiled into 'the great map'

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<sup>9</sup> See eg Reid p180.

<sup>10</sup> Wolfgang Scharfe, *Abriss der Kartographie Brandenburgs 1771-1821*, 1972, with a specimen at Abb. 5a.

<sup>11</sup> Y O'Donoghue, *William Roy, 1726-1790*, (British Museum, 1977).

<sup>12</sup> JB Harley & Y O'Donoghue, *The Old Series Ordnance Survey Maps of England and Wales*, Vol I, 1975.

lodged in the Tower, in other words into a single MS map, just like the survey of Scotland. A single copy had sufficed in 1759; therefore a single copy was all that was needed in 1790.

These ideas were not to last much longer. In 1798 it was agreed that Faden might engrave the map of Kent for public sale. The following year, Mudge wrote to the Deputy Master of the Ordnance, suggesting that ‘since it would be impossible to publish a portable map’ of Essex showing field boundaries, the ‘very minute part of the Survey’ might be relinquished. Note the thinking: that nothing is worth doing that cannot be *published*. Those proposals were accepted; and thenceforth the Ordnance Surveyors’ Drawings show only such detail as was thought suitable to be engraved.

What occasioned the change? A number of influences occur to mind.

*Colonial Warfare.* Recent military experience was primarily in America. Commanders at quite low levels were accustomed to assessing the tactical situation and developing plans. They needed maps for this. The number of such commanders meant that such maps had to be engraved.

*County Maps.* Most country gentlemen and their sons were accustomed to using county maps. If those gentlemen entered the militia or bought commissions for their sons in the regular army, they were not enamoured of the idea that only the commander-in-chief needed a map.

*Landscape Change.* The idea that the country was divided into open-field arable, suited for manoeuvring, and nasty boggy pasture was now nonsense. Large parts of the country had no open-field arable; and officers with a taste for fox-hunting knew how fast they could move over enclosed land, be it pasture or arable. Whether a cavalry charge was possible in such country was perhaps a disputed question. Either way, the Schmettau style of map was inapplicable to the England of 1800.

Disentangling these influences will not be attempted here. My purpose was to draw attention to a German style of thinking about mapping which perhaps originated from Minden but which died in 1799.

A postscript: what happened to Lord George Sackville? The court found him guilty of disobedience to orders, but continued:

“It is the further opinion of this Court, that the said Lord George Sackville is, and he is hereby adjudged, unfit to serve his Majesty in any military capacity whatever.”

Since the King had already dismissed him, this was the least the court could do without provoking a major crisis. It was the closest to an acquittal that was politically feasible.



## ***The GB1900 project –from the horse’s mouth***

***Paula Aucott, Chris Fleet, Humphrey Southall***

December *Sheetlines* included a short article about our GB1900 project, which ended by describing it as “misconceived”.<sup>1</sup> We would like to set the record straight.

GB1900 is a crowd-sourcing project to transcribe all text strings from the second edition six inch to the mile County Series maps published 1888-1914. The project is a collaboration between the National Library of Scotland, the Great Britain Historical GIS team at the University of Portsmouth, the Royal Commission on the Ancient and Historical Monuments of Wales, the University of Wales Centre for Advanced Welsh and Celtic Studies, the National Library of Wales and the People’s Collection Wales. The final goal is to create the largest historical place-name gazetteer for Great Britain specifically including co-ordinates. For more about the background to the project see Southall et al (2017).<sup>2</sup>

In an important sense, this is part of the same research agenda as that of the English Place Names Survey (EPNS): “The first requirement in the survey of the place-names of a county is a gazetteer”, and more specifically “a record by parish of all the names on the six-inch O.S. map”.<sup>3</sup> That survey began in 1923 but has still to start work on several counties; and anyway excludes Wales and Scotland. GB1900 started as a purely Welsh project called Cymru1900, conceived at a meeting in Aberystwyth in 2011 concerned very specifically with creating a Welsh equivalent to EPNS. However, obtaining funding from the Welsh Government depended on having a plan for timely coverage of the whole country. That led to a focus on the initial six-inch gazetteer, and on crowd-sourcing.

What makes sense for an individual researcher working on a small area does not necessarily work in a crowd-sourcing project involving over a thousand volunteers. The *Sheetlines* article complains that we are transcribing not just “place names” but essentially all text strings, but this was a conscious decision, because we could not rely on volunteers making consistent decisions about what constituted a place name. In fact, even if a single individual had attempted the entire task, it is unlikely they could have been entirely consistent from Cornwall to Caithness. Conversely, it will be easy for us to filter out repeating strings such as “F.P.” to create a more narrowly-defined place-name gazetteer; but we are already also mapping the c. 300,000 “F.P.”s to study the historical development of the footpath network, and working with another researcher interested in the c. 9,000 post offices. This is a fascinating and diverse geographical portrait of late Victorian Britain, easily sub-setted, so why complain?

<sup>1</sup> *Sheetlines* 110, December 2017, pp48-49.

<sup>2</sup> H Southall, P Aucott, C Fleet, T Pert, and M Stoner. ‘GB1900: Engaging the Public in Very Large Scale Gazetteer Construction from the Ordnance Survey ‘County Series’ 1:10,560 Mapping of Great Britain.’ *Journal of Map & Geography Libraries*, 13 (1), (2017), pp7–28.

<sup>3</sup> AH Smith, *The Preparation of County Place-Name Surveys*, London: English Place-Name Society, 1954.

Every new transcription began with the creation of a pin which assigns the transcription a co-ordinate, but it is often difficult and sometimes impossible to identify the precise location or feature to which a text string on a map refers. This is perhaps particularly true of these six-inch maps, which have no symbology. Again for consistency, volunteers were therefore instructed to always position their pin in the bottom left corner of the first word of the text string. Inevitably the precision varies, but at this scale the real-world errors are of a few yards: for what use cases does this matter? For most users of a future GB1900 gazetteer of names in web-based map presentation of the six-inch maps, selecting a particular name in the gazetteer will allow the map to be positioned so the name is clearly visible and centred on screen with no pin visible.

The *Sheetlines* article uses the example of Upper Gilwern, Radnorshire, and complains that there are pins both correctly on the name and incorrectly, in our terms, on the building. It fails to note that the latter pin has no associated text, precisely because it is an error, so will be filtered out of all final data sets. Involving large numbers of volunteers inevitably means many initial errors, but the system requires that every transcription be confirmed by a second volunteer typing exactly the same text string in as the first. If the two transcriptions were at all inconsistent another volunteer would need to make an additional transcription which matched one of the existing ones.

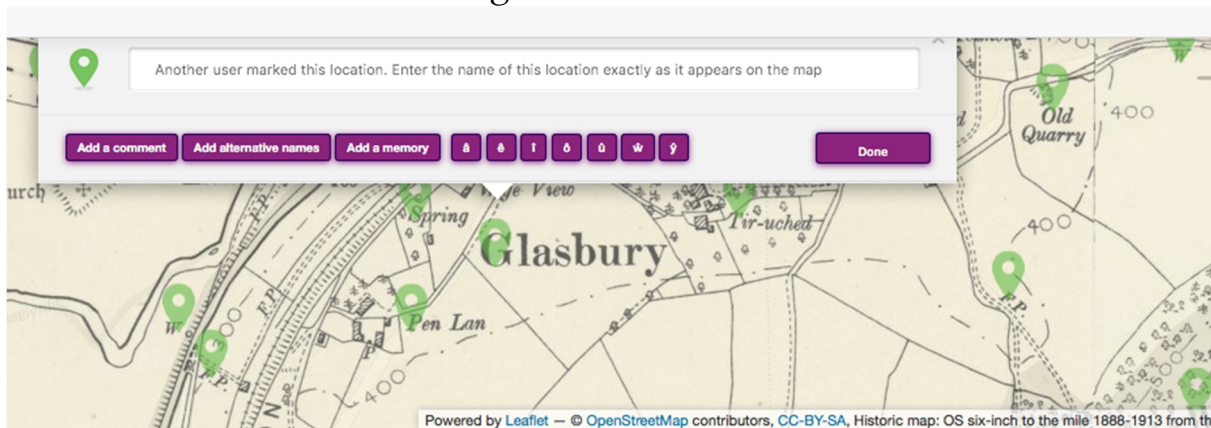


Figure 1: GB1900 confirmation interface

Finally, it needs to be understood that the GB1900 gazetteer does not yet exist. When the last issue of *Sheetlines* was published the transcription phase was still in progress and two systems were online: the GB1900 site itself, which was a transcription tool and displayed only the maps and the pins needing confirming, not the transcribed text; and the progress dot map system developed by the National Library of Scotland, which is what the article describes and contains periodic snapshots of the raw data.<sup>4</sup> Transcription has now ended, and GB1900 is no longer accessible. In total, the volunteers located 2,666,341 strings on the maps, and contributed 5,500,339 transcriptions. It is hard to see how this could have been matched by an academic research team.

<sup>4</sup> <http://geo.nls.uk/maps/gb1900/>

However, we are now just starting a cleaning process, focused particularly on the c. 20,000 strings where all three transcriptions differ. Only when data cleaning has been completed will the GB1900 gazetteer be made available for download, in a number of versions: a complete dump of all the raw data from the site; a cleaned version with just one agreed version of each text string; and a sub-set of that limited to our particular definition of place-names. The project partners will also use the data in their own systems: the Portsmouth team's *A Vision of Britain through Time*, the *List of Historic Place Names* in Wales and the National Library of Scotland's *Map Images* website.

In the meantime there are two ways the raw data can be accessed. Firstly as a large downloadable zipped .csv file which offers a snapshot of the raw transcribed data collected during the first three months of the transcription phase.<sup>5</sup> This was provided as a demonstration dataset to allow interested parties to experiment with incorporating the data collected into their own work. Secondly via the progress dot map noted above. As its title suggests this interface was designed as a tool to help volunteers and the team assess where more needed doing as the project progressed, rather than for use as an actual gazetteer. It presents each pin in the raw data as a dot which can be clicked on to reveal the transcribed text string. This interface also offers three examples of the kind of selective mapping that can be derived from the information held within the data.

While neither option is ideal, they offer an interim solution for an unfunded project. GB1900 has produced a remarkably large dataset and it will take the very small team working on cleaning it some time to finalise and publish the end result. But the result will be of great value to anyone interested in the British landscape of a century ago, and will comprise the first comprehensive listing of names from the OS six-inch to the mile mapping. As these were the most detailed scale which comprehensively covered the whole of England, Scotland, and Wales, we hope the GB1900 gazetteer will be of great practical and academic value, and further the onward use and enjoyment of these maps.

#### **Scottish Maps Forum Seminar - 20 April 2018, Glasgow**

The next in the annual series of popular map day seminars features talks from nine speakers who have all been working on new research or projects relating to early maps of Scotland. The day will include papers on canal plans in the National Records of Scotland, the value of maps for researching urban history, the mapping of river boundaries, recent doctoral research on the Bartholomew map-makers, the funding and financing of surveyors and their county maps, Scottish mapmakers who emigrated to the Antipodes, and the latest mapping developments from Historic Environment Scotland. Three of the presenters are active members of the Charles Close Society, and there will be inevitably be many connections with Ordnance Survey mapping too.

The cost is £25 for the day, including morning coffee and a buffet lunch. Please book before 5 April. Further information and booking form at:

<https://www.nls.uk/media/1553877/2018-scottish-maps-forum-seminar.pdf>

<sup>5</sup> <http://www.visionofbritain.org.uk/data/#tabgb1900>

## ***A Bavarian comparison – supplement***

***Rob Wheeler***

Following the appearance of my article in *Sheetlines* 110, my attention has been drawn to the Bavarian State Library websites which make available some really important sources. They need some explanation.

Let us start with the Urpositionsblätter, the original MS version of the 1:25,000 Positionskarten, accessible at:

<https://www.bayerische-landesbibliothek-online.de/urpositionsblaetteren>

Click on 'to the survey map' to get an index diagram. Hovering over the diagram will produce small images of the different sheets which are just about large enough to enable one to home in to the desired area. Click on the sheet you wish to see; click again to get a full-screen image, and again to zoom in to the portion of interest. There is only the one level of magnification available: it is good enough if one merely wants a depiction of the landscape but is inadequate to study the finer points of the cartography.

The margins to these sheets show the numbers of the 4x4 cadastral plans or Flurkarten from which they are derived. Their numbering system has its origin in Munich so both the row number and the column number can be positive or negative. Rather than use a minus sign, sheets state which of the four quadrants (from Munich) they belong to. For northings, Roman numerals are used.

These 1:5000 MS Flurkarten have been scanned, but are only available from a digital reading room in Munich. If you want to see a specimen in the flesh there are a couple of dozen lithographed sheets in the British Library. The 1:5000 scale is too small for settlements, so these were drawn as a series of Beilagen - enlargements to 1:2500. They are also known as Ortsblätter and are available at <https://www.bayerische-landesbibliothek-online.de/enortsblaetter>

This offers a number of ways of accessing them via the place-name but no way of linking them to the sheet number of the Flurkarte to which they belong. There is nevertheless scope for spending many happy hours comparing the styles of different draughtsmen and periods.

I have provided links to the English version of both these sites. If you click on the German flag, you will switch to the German version. This has the advantage of a 'Further information' option which gives additional material, including a diagram of the Flurkarten numbering system.

Finally, <https://www.ldbv.bayern.de/ueberuns/ldbv/geschichte.html> opens with a contemporary view of the measuring of the enormously long base line, showing how a level line could be obtained across a marsh. Great fun to look at, though I doubt it was much fun squelching through the marsh.

*To make it easy to follow the links, this article is available online at  
[www.charlesclosesociety.org/files/WB.doc](http://www.charlesclosesociety.org/files/WB.doc)*



## *Re-inventing the romer*

*Thomas O'Loughlin*

### *A military need*

Fifteen years ago RT Porter gave us an account of some simple pieces of card developed in 1915-16 to assist in giving more precise references on the new squared maps being issued on the Western Front.<sup>1</sup> These pieces of card – then simply described as a ‘Reference Cards’ – and their use are described in detail in an army pamphlet of December 1916 which stated:

“To facilitate the use of coordinates on the maps, special cards have been prepared and issued. ... the cards [are] for the 1:20,000 and 1:10,000, and for the 1:100,000 scales.”<sup>2</sup>

The pamphlet illustrates two such cards: one which can be used for the two larger scales, and another for 1:100K scale. I have never seen one of these cards, but from the images and description it is clear that two separate cards were being issued.

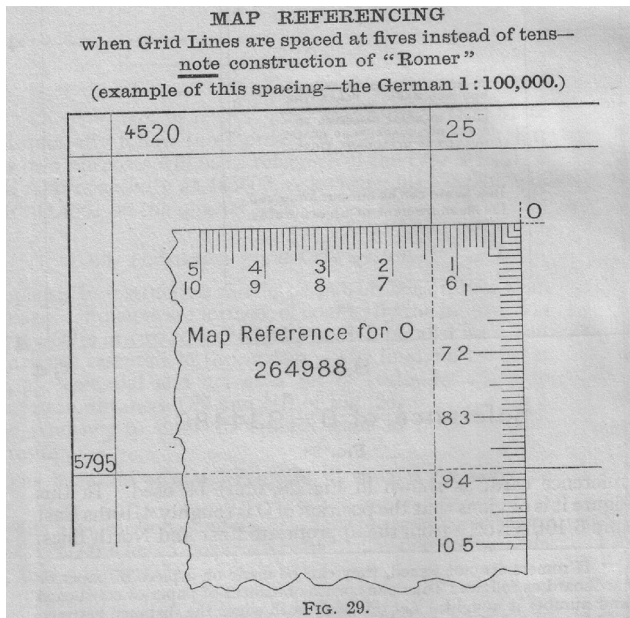


Figure 1: From 1929 Manual, p. 56

The next appearance of the cards, as pointed out by RT Porter, was in the 1929 War Office *Manual of Map Reading, Photo Reading, and Field Sketching* where the cards are now called Romers – though this is placed in inverted commas as if the name is a new technical and unfamiliar term: so the heading reads: “*Romers*” or *Reference Cards*.<sup>3</sup> Now in addition to the diagram of a standard British Romer<sup>4</sup> there was a diagram of a metric Romer (numbered in cm, lines 1 mm apart) for use on the metric grids of continental maps, and there is guidance on various gridlines found on Belgian, French, Swiss, and German maps. The second Romer

diagram with two sets of numbers (0-5 and 6-10) on each edge; the second set (6-10) for use with grid lines spaced 5km apart (see figure 1).<sup>5</sup>

<sup>1</sup> RT Porter, ‘Romer and his Romer,’ *Sheetlines* 63, 39-42; and ‘Romer and his Romer: an addendum,’ *Sheetlines* 64, 30-31.

<sup>2</sup> *Maps and Artillery Boards*, p. 15; the 1917 US Army reprint of this pamphlet is available as a pdf on the Defence Surveyors’ Association site: <http://www.defencesurveyors.org.uk/Historical/WWI/WWI.htm>

<sup>3</sup> London 1929; this edition was ‘Reprinted with Amendments’ in 1939.

<sup>4</sup> Reproduced in *Sheetlines* 63, 41.

<sup>5</sup> I am indebted to the anonymous reader for pointing this out to me.

The official training manual supposes that Romers will be available and ‘must be used’ if ‘particular accuracy is required,’ but just in case it advised that:

“they can be made on a piece of paper ... as follows: Take one corner ... and number it nought. Set off along both edges the distance between the grid lines. Subdivide this distance into tenths and number them from 0-10 outwards from the corner or zero point.”<sup>6</sup>

Moreover, both the idea of a card for establishing grid references and the name ‘Romer’ seem now to have become widespread. An anonymous introduction to the Romer can be found in *The Complete Guide to Military Map Reading*.<sup>7</sup> This states that for accuracy ‘a Romer should be used’ and it gives a diagram of a Romer and describes its use with a 1:25,000 map. It also adds this curious detail: ‘if the student does not possess one on his Service protractor, it is easy to make one’ from paper or card. Was a Romer ever added to the Service protractor? I have never seen one with a Romer; and, significantly, the book’s own detailed image of the protractor (pl. E, facing p. 74) does not include one.

In 1940 W Allason wrote a small textbook *Military Mapping and Reports* which is emphatic on its use.<sup>8</sup> In describing giving references from a map with a co-ordinate system based on the sheet, he declares that ‘The Romer method enables [a] position to be absolutely pinpointed.’ But the actual account of the system leaves something to be desired:

“*Romer*

To obtain the exact position of any point in a grid square a Romer is used. This is the size of the square, the top and right edges have 10 divisions. Plate 7, Fig 1 shows a km. Romer being used on a km. grid at one inch to the mile. The point P is 3 tenths eastward, 4 tenths northward.”<sup>9</sup>

To those who know what they are doing in using a grid this guidance is unnecessary, while to those that are unfamiliar with the notion of a grid, much less a Romer, this information is useless. Indeed, more confusion awaits the unwary because Allason supplied an image of a Romer with the advice that it can be ‘cut out, pasted on Buckram and varnished.’ The only difficulty is that this Romer is 5¾” square, each ‘tenth’ is intended to be c. 9/16” long (they actually vary by up to an 1/8”), and it was intended for use with an eight-inches to the mile (1:7920) map. Brigadier Allason was keen to give a practical flavour to his book – it is for junior officers engaged in mobile warfare – but one wonders did any soldier ever see such a large-scale map on active service? One suspects that Allason has heard of Romers but was not actually familiar with them.

<sup>6</sup> p. 53; a pity the draughtsman of the diagram on p. 54 did not follow this advice!

<sup>7</sup> I have war-time reprinting of the tenth edition, Aldershot 1938; pp. 15-7.

<sup>8</sup> London 1940; I used the fifth edition from 1943.

<sup>9</sup> Pp. 11-13; the actual figure is on a different page, and a very small, and unclear drawing: only someone who already knows what it is supposed to show could understand it.

## The "Romer"— A simple gauging square

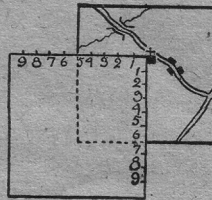
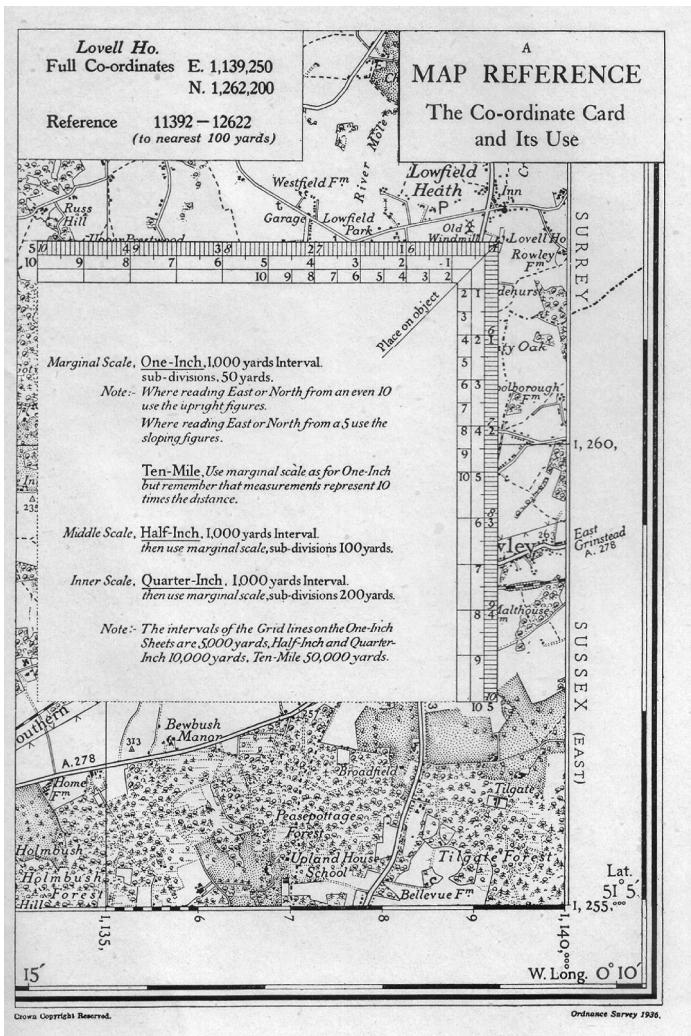


Diagram 6

A SIMPLE device to find the position of a point in a square of the "One Inch" is to cut out a piece of thin card the same size (2" by 2"), and divide each side into 10 and number them, but adverse ways as in Diagram 6. Then, by putting the corner where the "1's" meet on the desired spot, and keeping the edges parallel with those of the map square, the figures where the edges of the two squares cut will give the readings. The gauging square is called a "Romer." So the reading of the church in Diagram 6 is 51.65. The end joint of the little finger is a good measure for a mile, being usually an inch long on normal persons.

Besides the mile scale being on the bottom margin of these Ordnance Maps there is also the kilometre scale, besides a fount of other information.



By contrast, the anonymous author of the 6d pamphlet *Map Reading, Field Training, Scouting, Observation & Camouflage* (all in 48 pages)<sup>10</sup> has both a clear introduction to the notion of a grid, and then the section shown in figure 2 (left).

All this does not mean that the name 'Romer' was universally in use by 1930s. The great promoter of the Grid,<sup>11</sup> HSL Winterbottom, does not use the term in his *A Key to Maps*.<sup>12</sup> He is clear that for a 'more accurate' reference 'a card measurer must be used.' He assumes that the map-user will make this out of 'an old envelop' or cardboard, adding that 'during the War many of us used pieces of zinc, which, however, had the drawback of oversharpened corners' – and there is no hint that any special cards were issued. He then says that: 'it is far easier to illustrate a card that to describe it' and offers the reader an image of 'The Co-ordinate Card' calibrated for the 1", 1/2", 1/4", and 10-mile maps. Unfortunately, the picture is not that clear: it tried to show too much, and does not locate the card on a grid line so as to read the northing (see figure 3, left, plate 6 from Winterbottom's *A Key to Maps*).

### Post-war Romers

The Romer does not appear to make its way into civilian textbooks on map reading. Virtually all have a long section explaining the logic of the National Grid and how to use it – but assume that giving co-ordinates within a grid square is a matter of estimation by eye. One notable exception – and I am sure there are others

<sup>10</sup> It is by 'The Scout' (A.S.M) – I have not been able to trace who A.S.M. was - and subtitled *Success in Home Defence* (published by The Guardian Press, Walthamstow) and it was priced 6d. The author envisages a time after a German invasion when a resistance movement would be engaged in guerrilla warfare.

<sup>11</sup> See H.S.L. Winterbottom, 'The National Grid', *Geographical Journal* 63 (1924) 491-6.

<sup>12</sup> London, 1936 and many reprints; the relevant pages are 129-30 and pl. VI facing p. 130.

– is the *Ordnance Survey Teacher Resource File: Port Talbot*.<sup>13</sup> This shows two Romers – named as such – for classroom exercises with 1:1250 and 1:2500 maps. Intended to give accuracy of one metre, there is no mention of their use with grid references on the more common small-scale maps. Moreover, they assume one places the pointer of the Romer in the bottom left corner of the grid square and then counts to the XY intersection rather than ‘reading off’ the two numbers by placing the pointer at the chosen location.

But the Romer has not been forgotten. Sometime in the 1950s the car rally partners Eric Gardner and John Cridford produced *The Garford Romer* – which is still on sale on Amazon. A 3 inch square of white plastic which, though primarily intended for use with 1 inch maps, also has a second Romer for 1:25,000 maps. In a similar vein is 2017 *Protractor Romer* produced by Military Pocket Books Ltd. This transparent plastic sheet is larger than the Garford (5 5/8" x 4") and has three Romers: 1:25,000; 1:50,000; and 1:190,080 – and because it has squares rather than just numbered scales it can be used to count-up area on a map. But it is not very useful in that the scales run from 1 to 10 (rather than 0 to 9) and instead of both scales starting in one corner (ideally the top right given that we work eastwards and northwards in the National Grid) these scales run from left to right and bottom to top. So, in effect, the scales add nothing to what one would have with a plain grid of squares – one still has to count rather than read off. Meanwhile, the presence of the scales could cause confusion as to which grid lines one should count from.

But the Romer now has a new fame: it has an entry – whoever wrote it really knows their stuff – on Wikipedia.<sup>14</sup> This entry has not only a good description of its origins and use but has an excellent illustration of one being used. It also has a link to another site, now archived, called ‘Merlin’s Pyramid: Making a Romer’ with more information and two Romers (1:25k and 1:50k) to print out on an A4 page and use.

### ***Romers abroad***

While the name Romer appears to be confined to the Anglophone world, the idea is not. The basic idea has been incorporated onto the base of many compasses. But more interestingly Romers are printed on the plastic sleeves of many topographical maps on the continent. On the Italian 1:25,000 ‘Tabacco’ maps (all for the NE Alpine region of Italy) the sleeve not only keeps the map clean but allows one to use the grid with accuracy. This is a very handy Romer in that it can be used even when the map is not on a firm level surface: it bends with the map. It is not as convenient as the classic Romer in that the scales originate at the bottom right corner rather than the top right corner – but the instruction diagram is clear as to its use. The presence of this Romer (now called ‘A Coordinate Scale’ - and with names in Italian, German, and French) may be explained by the concern of these maps with Alpine hiking and rescue – being able to give an

<sup>13</sup> No publishing details given, but presumably Southampton and c.1993; the Romers are on p.39.

<sup>14</sup> <https://en.wikipedia.org/wiki/Romer> (accessed 23 December 2017).



exact location from the map could be a very serious matter – and also due to the fact that while the Italian Grid is based on the UTM projection, it is not printed on the map parallel to the edges – so one cannot use the scale along a map's borders for accuracy in the centre of the map (*see figure 4*).

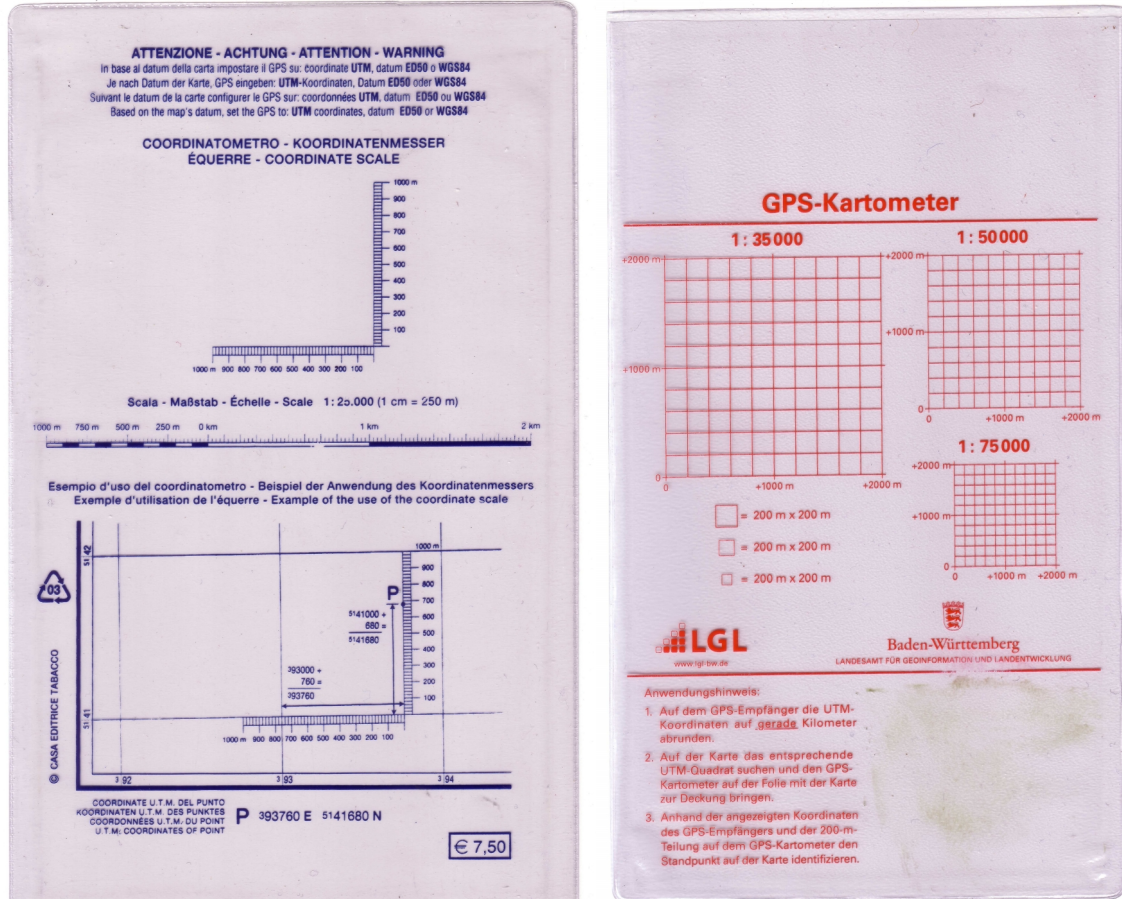


Figure 4: Sleeve from a 'Tabacco' 1:25,000 topographical map  
Figure 5: Sleeve from Baden-Württemberg state topographical map

On the Italian map the Romer is named in German *Koordinatenmesser* ('coordinate measurer') but when the Germans place a Romer on a plastic map sleeve they name it a *GPS-Kartometer* ('map measurer'). These can be found on the topographical maps produced by several German states. The sleeve illustrated comes from Baden-Württemberg and has Romers for three map scales. While it has the advantage of being also useful for measuring area, as a way of finding a grid reference it has a couple of faults. First, one has to count outward to the precise location rather than 'read off' the reference; and, secondly, there are no instructions on its use (*see figure 5*).

However, I criticise either of these Romers with hesitation. What useful bits of plastic these are! Not only do they protect one's map, keeping away damp and dirt, but provide a Romer that is always at hand when one wants it: when reading the map.

## ***Kerry musings***

***David Archer***

I am certainly not the best person to give advice on collecting, but if asked, I would suggest that any collector, novice or established, should not be too limited in their collecting field. For Ordnance Survey maps, anyone who restricts their collecting interests too narrowly, to the exclusion of all else will quickly regret it, and a pleasant hobby will fail to give enjoyment, leading to frustration, and in the most severe cases an obsession. I am not sure whether there is such a thing as a mild obsession, a fixation maybe? But anyway, a lot of people seem to become fixated by a group of maps, or a single map series. The best documented obsessionists favour the one-inch *Popular Edition of England and Wales*, the *Seventh Series*, and map covers. I am tempted to say that some collectors become fascinated by these maps, then fixated and eventually obsessed. Meaning that the maps take over their lives as an addiction does, except that for many addictions it is easy to obtain the necessary to satisfy the craving, but with old OS maps, supplies are erratic at the best of times. Not that the obsessed want just any old map, they strive for the whole lot. Completeness, including the ultra-rare and abominable-snowman-only-rumoured-to-exist-and-never-seen examples.

When an OS map collector decides to collect only a single series, warning bells should ring, followed by a speedy visit from Map Collectors Anonymous. Even with unlimited time and money, for long periods what is sought will not be available to buy. No matter how much one looks, nothing will be found, and this cannot but be disappointing at the very least. Such disappointment, depending on one's emotional make-up, will sometimes lead to depression, but more often to a constant obsessive seeking or in some cases, to giving up and starting collecting yoghurt cartons. Always yoghurt cartons. I cannot say why some people become intensely interested in a particular group of maps, but it happens. In the initial stages, all goes well, and maps are added to the collection fairly often. A list of sheets wanted or held is then carried around, initially of sheet numbers and then of states identified by print codes. A nice relaxing hobby. Eventually, it is realised that little is being found, so a big push is undertaken, with all possible sources being checked several times within a couple of months. And still little appears. This is the critical moment, when they should realise that *there is absolutely nothing one can do to hurry along more maps*. This is the real killer. Not only the waiting, but the inability to do anything that might bring in more maps. If this is ignored and the collecting urge continues, the seeds of an obsession are sown.

With a low find rate, the maps are studied beyond belief, seeking anything that might make a valid addition to the collection. It is soon noticed that the same state of some maps can exist in different formats, dissected, cloth or paper within standard OS covers. Clutching at straws, one wonders whether these should all be collected? No, not exciting enough for a hot-blooded OS map collector. But wait, some covers have different prices, and surely these are worthy of further investigation, especially as the prices have different styles of lettering? Aha! We are on to something here, with many of these maps being readily available, and so purchases and the wants list increase. Then there are variant area names on the covers for some series, with the Populars and others having paper stickers for different names. Oh, yes, here we go, better start all over again. If you cannot get one of every state, the next best thing is to go for quantity, and have every map slightly different in some way, enabling one to *keep buying*, no matter

how trivial the differences. How dare I use that word in this context?

The obsessionists always buy at least two or three copies of any sheet held, with the hope that something will be found to be different in some way or other, giving their spirits a boost and expanding the collection. In such dire times, one never relaxes and is always searching, listening and reading, in the hope that unknown maps appear. There is always a thrill in finding something unthought of, along with an unease that it might be the tip of an unknown iceberg, resulting in hours of speculation and years of frustration. So, a few years go by, with multiple copies of the same map being bought for slightly different map margins or covers. Don't worry, it is part of trying to understand the history of the Ordnance Survey, which is what we are all trying to do by assembling a research collection. Never thought of it that way before? Sort of privately held Ordnance Survey Record Map Library for this series. No sniggering, please. I once bought a vast collection of *Seventh Series* maps, where the object had been to collect a set in each of the four cover styles, in both paper and cloth formats where issued, and each print code in every possible cover. A real feat, which looked magnificent, even if prices and index diagram differences had not been sought.

An example of an extreme case might help. Someone finds a few and decides to collect something like the quarter-inch civil aviation maps in the blue and cream covers, which are not that common, and are quite attractive. Meaning that any put on display in a shop might well be snapped up by someone other than a map collector, just because they appeal. Assume our collector decides to collect a set each for Scotland and England and Wales. Frustration sets in almost at once as so few appear. Anywhere. But, being a true collector, they feel they must add to their collection. So, when a second copy of Sheet 8 appears, but this time in the longer cover, they buy it and now have two copies, in two styles of cover, a long cover and the smaller chunky one. Excellent. If they try to build sets in each cover style there are now twice as many things to look for, or more importantly, fewer maps to refuse. Wonderful. Wonderful my foot. With the same paltry number of maps appearing, they have decided to double what they are looking for. In no way will this increase purchases. Well, will it? They will now have four rather than two incomplete sets, and might be uncertain as to whether all sheets were issued in both styles of cover. A fine mess.

As boredom gathers momentum, they cannot resist buying yet another copy of Sheet 8 and notice that the cover price has changed. Must keep this. Why? Because it is *different*. And so price variations are collected when found. The next purchase has purple rather than brown layers. Must keep this, and look for others. And so on and so on until, being slightly-not-all-there, they start collecting only copies of Sheet 8 in all its variations. At which point no further copies of Sheet 8 appear on the market. Eventually, they get the chance to buy the large collection of a rival who has decided to take up the more sensible hobby of body building rather than collect OS maps. The new maps are raided for known wants, then the better condition maps are swapped over, leaving hours of scrutinising in order to winkle out something, anything that can justify keeping the remaining items. All right, it is a good tactic to have something to swap, but one must realise this means parting with a treasure. Even to receive one that is needed.

Collecting continues at a snail's pace for a few more years, seeking every conceivable difference found on maps and covers, until things dry up again, with many still needed. Frustration really sets in and a teeny-weeny hint of the word obsession is heard. The overwhelming desire has been to obtain pleasure from the collection by

adding to it. And when this is not possible one tries another approach: spin. Everything is listed, and the list edited in various ways in endless attempts to give the utmost pleasure to the collector. Statistics are worked and re-worked in order to present the current situation in the most pleasing light. One tries to squeeze as much pleasure out of the lists as possible. (When I write one, I mean our fictional collector, not myself of course. Oh, no.)

Right, so how does one/he/she get pleasure from the lists? Obviously, it all depends on how one looks at it, a glass half-full or half-empty. Our collector decides on the size of glass by drawing up a list of all items necessary for a complete collection, known and assumed. The whole lot; what one might be lucky enough to assemble in a couple of life-times. And then plays with it; endlessly. The first task is to tick all maps held, ignoring condition, so that the full extent of the situation is seen, even if listing does not deliver the goods. Percentages for maps held and wanted are then calculated. Maps held: 37.4% of all possibles, too upsetting, all those wanted maps are out there and unloved, gathering dust, with the full list being far too long. As maps held are stubbornly refusing to increase, one has to work on those not held in order to improve the figure for those held. So, items that might just exist are jettisoned, followed by maps reported by others, but not held by them. Having cleared out the speculation and assumed, things look a little better. A realistic collector might then identify those maps which he knows others are lacking and reluctantly accept they will never come his/her way, so they are crossed off, giving maps held, after statistical spin: 51.9%, better, but not wonderful. Whilst daydreaming, maps needed but owned by others are added to the holdings list in pencil, just to see what happens. Excellent, and for a short while this pleases, until it is accepted that working on your own, you will never approach the combined collections of others.

No, lists as surrogate maps do not really work. You still lack maps and just cannot find them. Finding the missing maps is the goal, and that far more are needed than are held is unimportant whilst acquisitions continue. Warning: a double disappointment awaits anyone who asks friends whether they might wish to contribute to the wonderful work in progress by swapping. Not only will they say "No", but will continue "did you know of this, this and this, that I came across the other day?" Blast and damnation, another three items to add to your list. And after studying your notes, another nine can be added as possibles. All the time our collector is looking over his or her shoulder, as they do not exist in a vacuum, where only they seek their chosen subject. They know they are competing. The maps do not appear on the market and wait for our collector to come along. Other wicked CCS members will pounce given the chance, as will people who do not collect maps, having absolutely no right to buy them, and should be locked up for such anti-social behaviour. With eBay, items can be missed, especially if a budget is held to. It is little consolation to have details of less common items that are missed, as by their very nature it will be a long while before they appear again. Such maps probably went to someone who only wanted an example. Why could they not buy a common sheet? Such as? Well, maybe something could be found, our collector grudgingly acknowledges. Yes, the copy of Sheet 8 with the thick black line through the cover price, which has been kept because the price might not be recorded, except that nobody can tell as the ink is impenetrable. No, that must be retained. For the moment.



### ***Framing the argument?***

I imagine many of us have lost more than a few minutes, poring avidly over an old map that's come to light again in a spring clean. Taking in the aura (or is it the aroma?) of bygone days; examining faint contours and putting changed landscapes into context for a while, in our mind's eye at least.

On days away from home, I know some of us feel the inexorable lure of local second-hand emporiums. We implore the clocks to stop so that we may rummage in boxes for cloth-bound treasures with odd, foxed corners. It's always time well spent: you never know what you'll find. Indeed, when a friend of mine was dithering in a suitcase of carto-flotsam and jetsam at a car boot sale last year, she spotted an original, rare edition of Speed's map of Merionethshire dating from the early 1600s (curse her eagle eyes). Bought it for a pound. Bargain hunt, indeed.

Adorned with a plan of Harlech castle, the Speed map is a scarce item. Certainly worth protecting. But valued maps like these are also well-worth hanging in a prominent place for fellow cartophiles to take their time with, and this led to an animated discussion between us about types of glass; backing paper; reversible-mounting adhesives; archival repair tapes; fluorescent lighting; the permeation of strong smells and – believe it or believe it not – the tenacity of woodworm in old buildings.

An original Speed is something to be treasured of course, but some Ordnance Survey maps are just as worthy of this consideration, the older or more unusual editions in particular.

For long-term enjoyment then, I'm sure you'll agree it is tempting to have any cherished map handled by a professional framer and stored appropriately. If not presented flat, in a map drawer, then hung on an internal wall in the innermost part of a house, away from direct sources of light or humidity. Or, if it is valuable, copied by a specialist (using a polarizing lens to avoid damage), and stored in an acid-free folder, out of sight and away from grubby fingers. However, a question arises: is it better to protect – or inspect?

I prefer my friend's approach to this conundrum. For a long time, her John Speed lay naked on a hall table. Some who passed through picked it (him?) up; most needed no encouragement at all to be gentle. Everyone who held the map touched history, and all who still peer at the margins of Merionethshire today get a sense of privilege from the intimate perusal of this original artefact.

The map is now hung, far more sensibly, in a conservation-quality ash mount on the North wall of her study – directly opposite an intricate, detailed, topographical map for an area on the surface of Mars: the Survey's recent Western Arabia Terra map, set in a brushed satinwood frame.

I object to my friend's insistence on calling her study 'the room of the sublime and the charmingly ridiculous'. And we are unlikely to ever agree on the importance of protecting against woodworm. But we do concur on one point: it is well worth spending as much time on the method of displaying cartography, as it is in the madness of collecting it.

***Merryn Henderson***



## Book reviews

**Jürgen Espenhorst, *Das Geheimnis des Karten-Wunders*, Schwerte, Germany: Pangaea Verlag, 2017, 978-3-930401-51-2, €24.50, hardback**

In *Sheetlines* 104 I wrote a description of what I considered a curious map intended for drivers which had been marketed as the ‘the Auto-maptic Map’ – basically a motoring map of the UK in an A4-sized hard plastic box where the various sheets were accessed by sliding tabs at its edge. Little did I know then that this form of map had been developed in Germany in the 1930s with the trade name *Karten-Wunders* and that the author of this book was writing an exhaustive history of it. One cannot really translate *Karten-Wunders* into English – probably why the English-language maps of Britain, the USA and elsewhere were marketed under another name, and later German editions also dropped it in favour of ‘Automaptic’ – but it means ‘magic map’, ‘miracle map,’ and ‘wonderful map’: suffice to show that its creators had no doubts about its genius, value, or utility for the motorist.

The book is itself a wonder: Espenhorst has tracked down every detail of the origins of the map, the men who invented it and marketed it, and the firms that produced them. So one finds out not just when they made these maps, the various places for which they produced maps, but even the processes they used to stamp out the bakelite ‘boxes’ in which the first editions were produced before that material was replaced by more modern plastics. Researching this book has clearly been a work of love for Jürgen Espenhorst, and the detail he has amassed locates these maps within a whole cultural world. For readers of *Sheetlines* who are interested in the history of road maps this book prove a mine of information. It is also worth noting just how widespread was the range of these maps. First, and obviously, Germany (many editions), Austria, Switzerland (their size meant that the maps of these countries were far more valuable as guides than for a country the size of Germany), Spain and Portugal together, Sweden, the USA (in two boxes: east and west), Benelux, Italy, and New Zealand – and there were plans for other places (e.g. Ireland) which never came to fruition.

There were also no fewer than seven editions of the map of Great Britain – I only knew of one when I wrote in 2015 – which appeared between 1954 and 1965. In addition, there was another box, produced in 1955, containing maps of Southern England and the Midlands. Indeed, after Germany, Great Britain was the most mapped country for this ‘magical’, if awkward to use, ‘map.’

The book’s subtitle is ‘and other notable gadgets (*Geräte*) for orienteering and navigation on land, sea, and in the air’. This really refers to the two final chapters (pp. 125-44) which examine various forms of maps on rolls for use in aircraft cockpits – including a very complex bit of kit that was intended for use in the Me 262 (the WWII German jet fighter-bomber). It is the account of such military mapping gadgets from the time of a strip map on two wooden rollers to the eve of contemporary computer mapping – itself the story of the move from analogue-mechanical to digital-electronic solutions to knowing where exactly one is when moving at speed. This latter section will primarily interest historians of military mapping and is I suspect, since it is less exhaustive in its treatment, a foretaste of another book.

**Tom O’Loughlin**

*Above: Advertisement from October 1939*

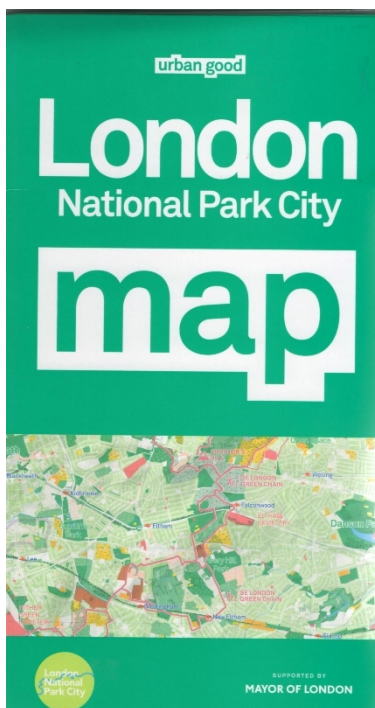
Pangaea Verlag can be contacted at [pangaea@cityweb.de](mailto:pangaea@cityweb.de)



**John King, *The railways of Kingston upon Thames a brief history*, Friends of Kingston Museum & Heritage Service, 2017, 978-1-9029059-15-1, £6.<sup>1</sup>**

From the 1830 prospectus for the London and Southampton Railway to the 2033 prospect of Crossrail 2, this slim volume charts the development of railways in the Royal borough. The story starts with the planning and construction of the first main line and continues with the development of the subsequent branch lines and stations, as well as describing some of the proposed routes which failed to materialise. The text is illustrated by contemporary photographs, advertisements and a sketch map and is supplemented with appendices listing station

names and railway company names. This is a useful small history, succinctly told, attractively presented and modestly priced.



***London National Park City map, Urban Good, 1st edition, October 2017.<sup>2</sup>***

This double-sided one inch to the mile map of the Greater London area is designed to showcase the surprisingly huge area of open space, wild space and blue space in and around the capital and to encourage its exploration by foot, public transport, and bicycle.

One side comprises the map itself, coloured in twenty different shades, each indicating a type of terrain or facility, with twenty waymarked walking routes and ten activity types picked out in red. There is a wealth of useful information on the other side, including maps of river catchment areas, natural landscape areas, gardens, woodlands and parklands, a chart of London's twelve highest hills, from Pinner Hill (126m) to Westerham Heights (245m) and statistics about the city's foxes, long-distance footpaths and twenty ideas for exploring London.

According to these figures, 49.5% of London is green or blue, with 8.3 million trees to 8.7 million people, seven wetland sites of international importance, 147 local nature reserves, 1586 sites of importance for nature conservation and over 3000 parks and open spaces.

This unique map could be just the thing to inspire the jaded urban commuter to get out and enjoy the tree canopy that covers 21% of the city in summer and, with luck, to nudge some of the quarter of London's 14-year olds who have never visited a woodland.

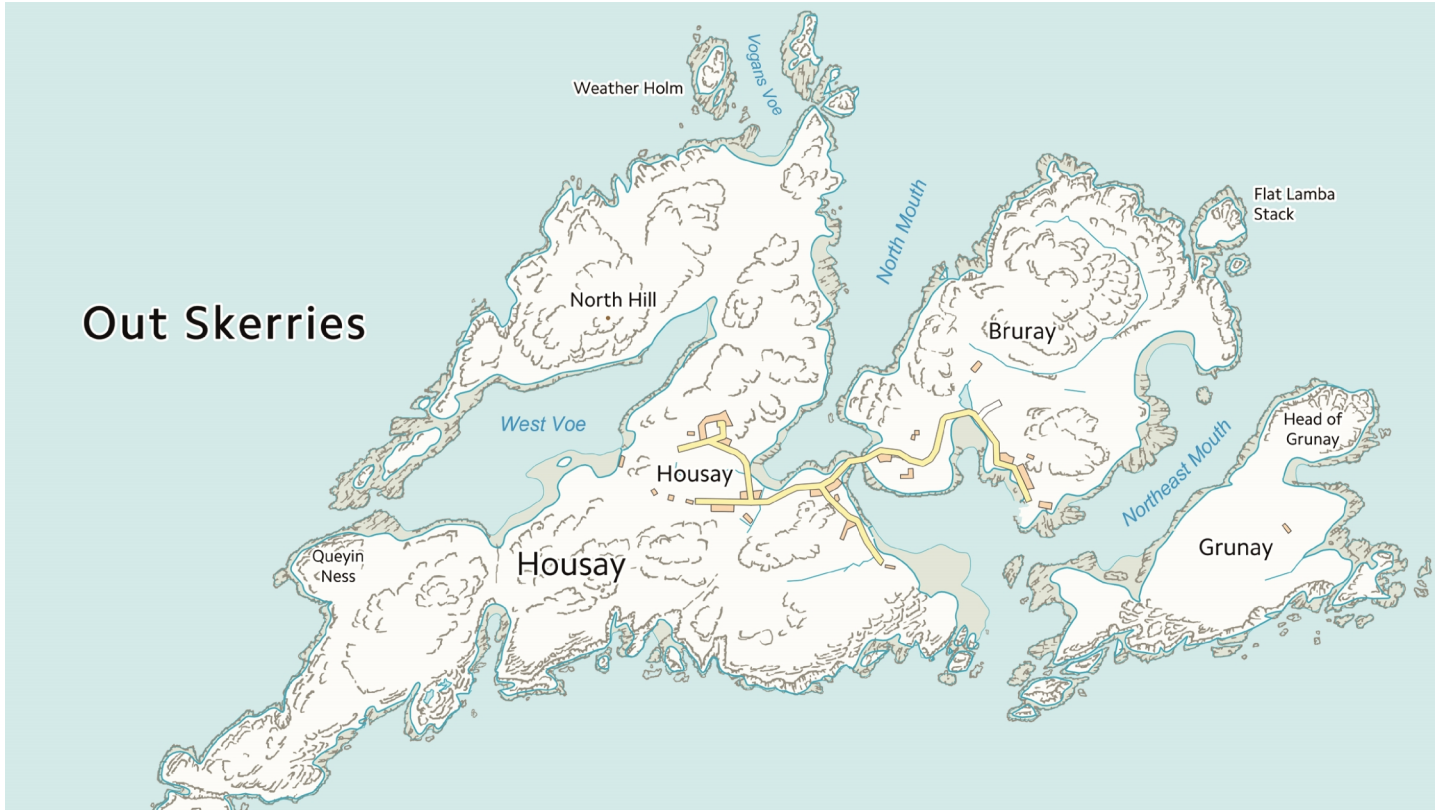
***John Davies***

<sup>1</sup> Available from The Friends, 65 Manor Drive, Surbiton, Surrey, KT5 8NF, price £6 including postage and packing.

<sup>2</sup> Available free of charge from <http://www.nationalparkcity.london/map>

### ***Also noted***

Alexander J Kent & Peter Vujakovic (eds), *The Routledge handbook of mapping and cartography*, Routledge, 2018, ISBN 9781138831025, £195.<sup>1</sup>



This is a collection of 43 chapters, each by an eminent practitioner, forming a comprehensive critical appraisal of the current state of the art, science, and technology of map-making.

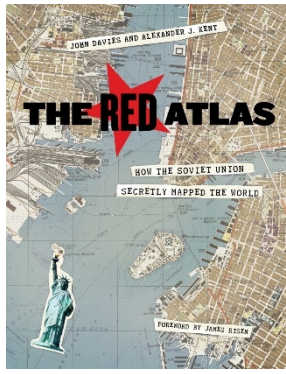
Contributors include such well-known names as Peter Barber, Christopher Board, Steve Chilton, Catherine Delano-Smith, Danny Dorling, Mark Monmonier, Chris Perkins, Mary Spence, Christopher Wesson and many others.

The essays are organised into six sections entitled Situating Cartography: From Craft to Performance, Exploring the Origins of Modern Cartography, Measuring the Earth: From Geodesy to GPS, Understanding Cartographic Design: Principles in Practice, Maps and Society: Use, Uses and Users, Reflections on the Future of Mapping and Cartography.

*Above: Included in his chapter on Lettering and Labelling, Christopher Wesson (formerly of the OS Geovisualization Team) demonstrates here how the hierarchy and placement of labels can be used to good effect in the mapping of island groups. This example is from OS Vector Map District.*

<sup>1</sup> An eBook version is available for £39.99 and a 20% discount on the hardback price is available by using code FLR40 at [www.routledge.com](http://www.routledge.com)





## ***Reactions to The Red Atlas***

It is rare for a specialised cartographic work to attract the attention of the mainstream media, but this has certainly happened with *The Red Atlas*.<sup>1</sup>

Any single review about anything, whether on TripAdvisor or in a scholarly journal, may tell you more about the reviewer than what is being reviewed. Thus, in a generous two-page spread headlined ‘Russia’s plans to INVADE’ on 26 January, the *Daily Mail* gives us a picture of the red flag flying over Parliament Square and begins with five paragraphs on Stalin’s terror and Soviet ‘mad Marxist ideology’ before going on to discuss the book itself. According to the *Mail*, ‘it can be guessed where the Red Army planned to arrive on our shores’.

And yet Simon Ings in a thoughtful review over several columns in the *Daily Telegraph* of 13 January, concludes from the same evidence that ‘there is little evidence that the mapmakers had invasion on their minds’! As befits a distinguished scientific journal, a brief review in *Nature* is cautious, ‘the gargantuan project *might* have been groundwork for a cold-war coup’.<sup>2</sup> Vitali Vitaliev, who should know, writing in the *Geographical Journal* for October 2017 comments that ‘it feels sinister to see the familiar ... toponyms, rendered in Russian, as if the places in question have been already occupied by the Soviet Army’. One explanation for the widespread notice taken of *The Red Atlas* is given by Elizabeth Elliott, ‘Public interest in Russian espionage is arguably at its highest point since the Cold War. ... But while the book does appeal to a general audience, it simultaneously challenges scholars to help mine the maps’ untapped historical value’.<sup>3</sup>

We may be lucky that the Charles Close Society’s own publications have never attracted the notice of the Russian press with the charge of glorifying the achievements of British quasi-military cartographers in the service of the capitalist state.

***Chris Higley***

***John Davies writes:*** Although *The Red Atlas* isn’t a CCS publication, it owes its very existence to the Society. My co-author Alex Kent and I have been members for over a dozen years and first met during the Society trip to Riga in 2006. On that occasion we learned much from visits to Jana Seta map shop (where the Soviet maps had first been offered for sale), the state cartographic print factory and the Latvian National Library. Our subsequent research was facilitated by members’ responses to articles in *Sheetlines*, meetings with members who provided information and shared their personal collections, and CCS visits to Bodleian Library and Cambridge University Library. The Society made these connections possible, which in turn made the book possible, and we are truly grateful.

<sup>1</sup> John Davies and Alexander J Kent, *The Red Atlas: how the Soviet Union secretly mapped the world*, University of Chicago Press, 2017. See the review in *Sheetlines* 110, 58.

<sup>2</sup> My italics. Barbara Kiser, *Nature*, 550, 187, 12 October 2017.

<sup>3</sup> Elizabeth Elliott, *Paper Plans: Inside the Mysteries of Soviet Mapmaking*, Perspectives on History: the newsmagazine of the American Historical Association, November 2017.

### ***Solution and solvers***

The railway termini depicted in *Sheetlines* 110 are: Aberystwyth, Buxton, Cleethorpes, Hampton Court, Hayes (Kent), Ilkley, Largs, Lowestoft, Marlow, Milngavie, Oban, Ryde Pier Head, Scarborough, Seaford, Skegness, Thurso, Uckfield, Wemyss Bay, Whitby.

Ryde Pier Head, which should have been one of the easiest, caught several people out, who offered just 'Ryde'. So, of the 43 correct or 'nearly correct' entries received, 29 went into the draw and the winner, pulled out of the hat by Chairman Gerry Zierler on 30 January was Nick Roberts, who wins the signed copy of *The nine lives of John Ogilby*.

The successful solvers (give or take the Pier Head), and some of their comments, were, in alphabetic order: Peter Addiscott, John Ambler, the Anstead family, Matt Ashley (*many hours of fun*), Chris Bartlett (*reference to Stuart Baker's inestimable Rail Atlas of Great Britain and Ireland suggests that there are 142 Network Rail termini in Great Britain, so we have plenty to choose from ... and as a confirmed gricer of many years standing, I have visited all the quiz answers by train*), Andrew Barton, Martin Buckley (*more of the same please - these are good for the old grey matter*), Graham Burnett, Ian Byrne (*leaving in the B road number on Milngavie was exceptionally helpful as it gave a central pivot alphabetically*), Jim Chisholm, Don Clayton, John Cole, Alison Ewington, David Graney (*great fun to do - thoroughly enjoyed it*), Bob Haskins, Bill Hines (*I'm embarrassed to report that the last which I recognised was Aberystwyth where I live*), Roger N Holden, David Jackman, Helena & Martyn Jackson, Paul Jackson, Graham James (*most enjoyable*), Geoff Kent, John King (*the most difficult for me should have been the easiest, namely Hampton Court near my house*), Tony Kirby, LW Knott (*an excellent quiz*), Rodney Leary, Nick Millea (*couldn't resist having a go at this*), Nick Moore, Phil Pearson (*some were well known to me, others less so, with the absolute stinker being Thurso*), Nick Roberts (*I have so much enjoyed this challenging quiz ... there were some very tricky ones*), John Savage (*would have taken a little longer if they hadn't been in alphabetical order*), David Sherren, David Smith, Nigel Smith, Malcolm Stacey, Peter Strugnell, Paul Swindell (*spent many difficult (but happy) moments coming up with my answers*), Andrew Turnbull (*I did enjoy the challenge, particularly digging out some Scottish sheets that rarely see the light of day*), Dave Vaughan (*I may be the only quiz entrant who occupies the ideal intersection of being both a CCS member and a full time train driver*), Tony Walduck, Keith Warman (*thoroughly enjoyed it*), John Winterbottom (*completed tolerably quickly yesterday with the aid of Railway Atlas Then and Now, by Paul Smith and Keith Turner. I recommend this book to anyone who is interested in exactly where all the railways lines are now, where they were in 1923, and what new use has been made of the disused lines and stations*), Alan Young.

Meanwhile, **Peter Haigh** asked you to find triplicate occurrences of the same seven-character grid reference, with H, N and S prefix.

His solution: The only location in the Northern Isles that has a matching land location both 500 km and 1000 km to the south is Foula, HT 960400. Foula, meaning bird or fowl island, is the most isolated inhabited island in the British Isles and the most westerly in the Shetland group, lying 22 km out into the Atlantic. It currently has a population of about 40 souls. To the south, NT 960400 is near Ford in Northumberland, some 14 km from Berwick upon Tweed. And a further 500 km south again, ST 960400 is at Codford St Peter on the southern edge of the Salisbury Plain some 22 km from Salisbury.

Were Shetland to be transported 500 km south, then it would lie off the Northumberland coast but, remarkably, not clashing with any of it (apart from the clash by the remote Foula). The proximity would extend some 40 km, from Holy Island and the Farne Islands, which would lie SW of the Walls area of Shetland, to Amble – off which would lie Sumburgh Head.

**Michael Spencer** was one of many who rose to Peter Haigh's challenge: there are two solutions, *he writes*, Sula Sgeir-County Down-Cornwall and Foula-Northumberland-Wiltshire. All other pieces of real estate in the major square H correspond to sites in the North Sea or the English Channel.

1. Sula Sgeir (Rock of the Eye) is a group of isolated rocks lying about 40 miles north of the Butt of Lewis. It is shown in an inset on *Landranger* 8. There is a light beacon, Admiralty No. A3870, at Sròn na Lice, the south end of the main islet, at grid ref HW618303. Pal a' Chaitainich, the north-east end of the main islet, is at HW624309. Furthest-flung outlying rocks are Bogha Còrr at HW612312, and Gralisgeir at HW618296. (All these Gaelic names were given by fishermen from Lewis and are in their local dialect. Most of them are essentially untranslatable in dictionary usages. Pal a' Chaitainich appears to mean *Useless fish to be thrown away*, which makes you wonder, Why just there?).

Five hundred kilometres south of Sula Sgeir we are on the south shore of Belfast Lough. The National Grid does not of course extend into Northern Ireland, but the National Library of Scotland is at hand with a useful map on line. Displaying the Bartholomew's half-inch brings up map on which the co-ordinates of the cursor are shown as grid references. We can then zoom in and out and move the cursor around to find NW618303, etc, all within a mile or so of Newtownards, which used to be in County Down until the bureaucrats began to vandalise Northern Ireland as they have done to thousand-year-old counties throughout Britain.

The SW references are in Cornwall and *Landranger* 203, does the trick. We find them all within a mile of the village of Godolphin Cross near Helston, not very far at all from the coast of Mount's Bay.

2. Foula is a lonely island about 30 miles south-west of Walls on the

mainland of Shetland. (If you've never heard of these places that just shows how lonely they are!) Its limits are its north and south points, at HT960414 and HT965362. It is only about three miles from west to east.

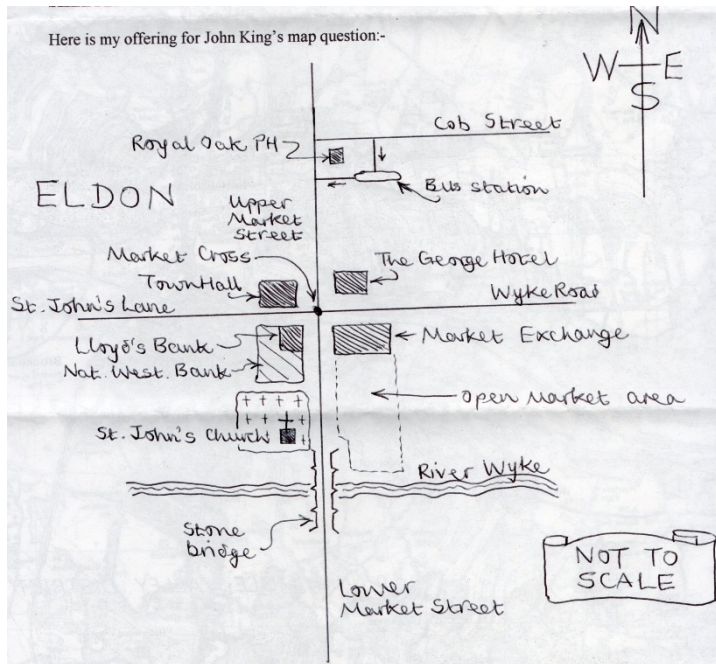
There are no difficulties in picking out the corresponding points in major squares N and S. The NT-references are a couple of farms, Woodend and Fordwood. They lie about 5 miles east of Coldstream, and are both in Northumberland. Their positions are shown on *Landranger* 74, but Fordwood is not named there.

The ST-references are in Wiltshire, just unnamed points near Codford St Peter and Teffont Magna, in the Wylde Valley and the Vale of Wardour respectively, about ten miles west of Salisbury.

I did wonder about playing this game in the opposite direction, starting in the Channel Islands and seeing how far north one could go; but even the NLS gives up its calculations before they have got that far south.

**John King** invited you to draw a map to depict the fictional town he described. Keith Warman's solution is shown here.

**Other answers:** The symbol indicates a solar farm and the green line is the Greenwich meridian.



## April puzzle

### Toponyms, homonyms and synonyms

For this month's challenge, we ask you to travel from north to south and identify these well-known place-names appearing on *Landranger* maps.

No prizes, but send your answers to the editor by 30 May for honourable mention in August *Sheetlines*.

- |                      |                         |
|----------------------|-------------------------|
| 1. Shout             | 11. Fred's stone        |
| 2. Believe in better | 12. Shape or growth     |
| 3. Scots unable      | 13. Browner             |
| 4. Consider          | 14. Bring under control |
| 5. Greenback         | 15. Sell drugs          |
| 6. Carefree          | 16. HG                  |
| 7. Remove skin       | 17. Brownd              |
| 8. Stop moving       | 18. Milkens             |
| 9. Continued         | 19. Share resources     |
| 10. Is ahead         | 20. WC                  |



## ***Letters***

With reference to the Puddleducks story in *Sheetlines* 110, 38, you may be interested to learn that OS published an article on their website on 22 August 2014 where they declare the centre of Great Britain to be 7km north west of Dunsop Bridge. See <https://www.ordnancesurvey.co.uk/blog/2014/08/where-is-the-centre-of-great-britain-2/>

**David Andrews**

I would like to thank you for publishing my article ‘Wirral’s stone circles – or were they’ (*Sheetlines* 95, 47) and for reaching out to a wide readership such that my fairly basic research seems to have excited so many people.

One recent reader, Professor David Gregg, has recently contacted me, to say that from his somewhat preliminary analyses, the stone circles at Overchurch and Arrowe Park are indeed “... purposeful geometrical layouts, despite his first reactions being “... that the sites were some kind of nineteenth century hoax. But further work on metrics and calendrical alignments convinced him they were indeed genuine”.

David Gregg went on to thoroughly analyse the layout of the linear arrays of some 37 stones close to the Overchurch Circle that I had identified on the 1872 six-inch OS map but only briefly mentioned in my article. In the conclusion of his, yet to be published, article, ‘The Fender Lane, Wirral Stone Array’, he reports that from his complex geometrical calculations, this ‘Array’ had geometrical properties that could not have arisen by chance. He goes on to say that ... if these preliminary, map-based, results are correct, then the Fender Lane array is an important Neolithic calendrical/astronomical site and one unique in England.

Although he has done a considerable amount of calculations on this array he does not want to rule out that they may well have merely served some early agricultural purpose so is seeking to have the site analysed further using geophysics and other surveying techniques at the site as long as permission to do so can be obtained

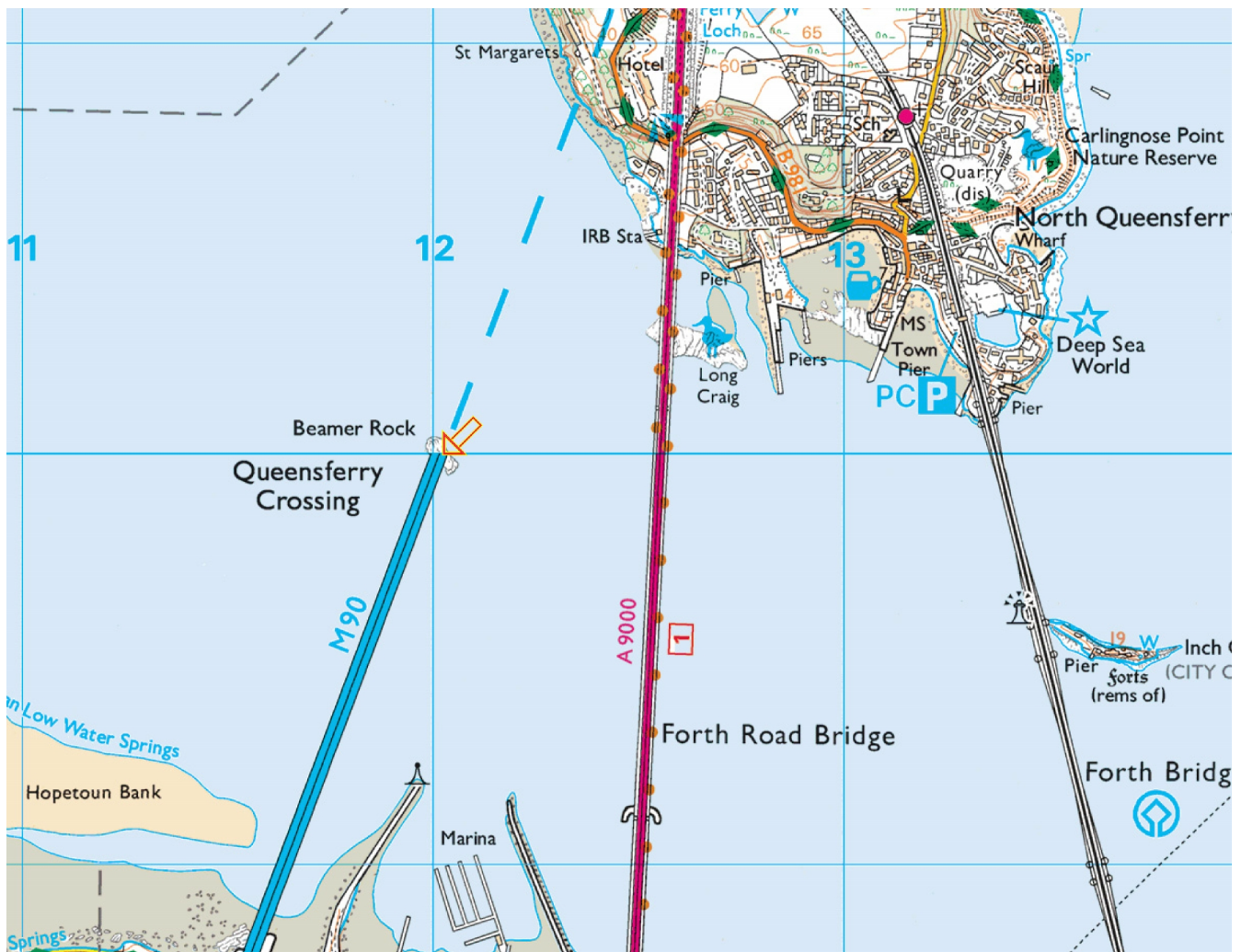
If all of this turns out to show that the ‘stones’ prove to be of true archaeological importance, then you can say that you saw it first in *Sheetlines*.

**Malcolm McIvor**

Without knowing it, we at BBC Research in the 1990s re-invented revision points! In those days uhf aerials on the top of main station television transmitter masts were reaching the end of their useful life. To check that the replacement matched the originals, we measured signals at various points around the sites. In order to accurately repeat the measurements (even a few centimetres difference could change the measured field strength) we noted a six figure NGR, and other location details; “front bumper adjacent to lamp post 123” and a photograph with the point number using insulating tape on a white board.

Nowadays this is done much quicker measuring from a helicopter for few hours rather than a measuring vehicle on a two-week outing. I have no copies of this but the station files were scanned for the BBC archives.

**Nigel Brown**



Several articles in *Sheetlines* have mentioned the Ordnance Survey's habit of sending staff out to re-survey a particular one-kilometre grid square for major changes but seemingly to ignore consequent changes in an adjacent square. Instances of this were implied in Rob Wheeler's article on the Special Emergency Edition maps in 1938 (*Sheetlines* 110, 3). This screenshot from [www.streetmap.co.uk](http://www.streetmap.co.uk) shows an alarming example of 'not crossing the line'. As it happens, local newspapers have been reporting that the Queensferry Crossing, which only opened last September, is currently partially closed owing to "snagging problems" that needed to be corrected. If the map is accurate, then the problem is certainly some snag!

**Tony Jervis**

A new edition of *London's Rail and Tube services* and *London & South East Rail services* map has been issued, effective from 10 December 2017, with dark blue cover (the previous edition of 21 May had light purple). Changes are:

- Cannon Street services resume calling at London Bridge with their services being combined at Borough Market with those from Charing Cross.
- The new West Midlands operator is named as West Midlands Trains, all the way to Euston (and not London NorthWestern railway) (replacing London Midland).

- The Cholsey & Wallingford Railway appears for the first time (so through tickets are probably available in 2018).

The Marlow and Henley branches have not been shown as having through peak hour trains in recent years so there is no change here now that they have been withdrawn (although this service limitation appears between Fulwell and Strawberry Hill, Ipswich to Harwich and on TL services via Kent House).

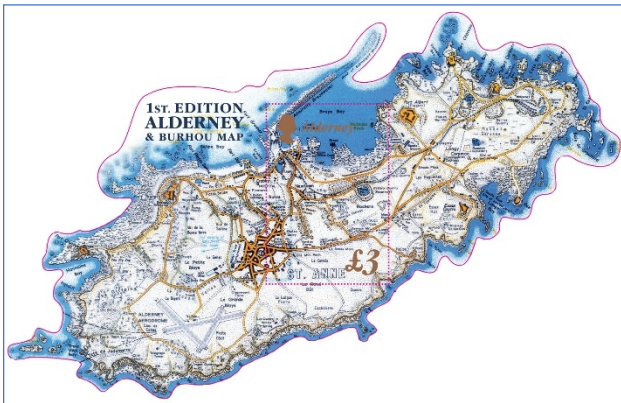
There are no Thameslink services shown north of London Bridge or off the Brighton line (e.g. to Littlehampton), but the Thameslink line to London Bridge from the south appears positioned to head towards Blackfriars again soon.

There was also a new Tube map issued in January 2018. The cover was designed by Marc Camille Chalmowicz and features a ladder and a bent piece of wood in green, yellow and pink. The map does not include Crossrail, which will presumably head straight east from Liverpool Street TfL rail to Moorgate, wiggle north to Farringdon, south to Oxford Circus, north to Paddington and then get to Ealing and beyond.

The latest Night Tube map, also dated January 2018, has Wing-sleepers by Marianna Simnett on the cover. This doesn't include the latest addition to the nocturnal

service, the extension of London Overground line to Highbury & Islington where it connects with the Victoria line, which opened on 23 February.

You may also be interested to see that Alderney issued a set of six stamps on 1 February 2017 to commemorate the publication sixty years ago of architect Roger Warren's Channel Island archipelago map of Alderney and Burhou. Roger was an RAF cartographer during World war II



and moved to Alderney with his family after the war.

See <https://www.guernseystamps.com/Alderney-and-Burhou-Map>

**Stuart Hicks**

Only with the publication of my review of the 'Three Peaks Challenge' map in *Sheetlines* 110, 44, have I properly looked at the design of the Scafell Pike version of the cover. It is a fine view down Westwater, showing at its head both Kirkfell and Great Gable. However, Scafell Pike is not in view, being off the frame to the right. And advertised as the 'Scafell Pike cover'. Another nail in the slipshod coffin.

**Peter Haigh**