## Sheetlines
Number 110 - December 2017

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Visits and meetings have always played an important part in the activities of the Society. Not only for educational and interest reasons, but also for social contact between members and the opportunity to share experience, knowledge and the sheer pleasure of collecting, examining and discussing maps.

Recent visits to London, Glasgow and Edinburgh are reported in this issue and meetings are being planned for 2018. These include a visit to The John Rylands Library in Manchester on 30 January and a weekend at the Shap Wells hotel, Cumbria on 13-15 April. The Shap programme promises to be very enjoyable, with local walks, talks and ‘show and tell’ and plenty of time for informal chats. Contact Bernard Anderson (details opposite) for more information and bookings for both events. We are always looking for interesting venues to visit throughout UK and Bernard welcomes your suggestions.

Membership renewal time is almost upon us and this year we have added the ability to renew online. See page 2 for details.

For the 2018 AGM on 12 May we will be returning to Tiffin School, Kingston-on-Thames. The speaker will be Nick Millea, map librarian at the Bodleian Library, talking about the forthcoming Oxford Atlas. Details will be in April Sheetlines. Suggestions are invited for future AGM venues by honsec@charlesclosesociety.org.

We regularly update members with latest news by email. If you don’t already receive them and wish to do so, please contact memsec@charlesclosesociety.org.

The website at www.charlesclosesociety.org is continually under development; the current on-going project being the collation of an archive of Ordnance Survey map covers. This ‘work-in-progress’ is at www.charlesclosesociety.org/coversintro.

Above: Members inspecting historic maps during recent Society visit to Middle Temple library. [photo David Webb]
**CCS membership renewal for 2018-19**

The CCS membership year runs from March to February, which means that renewal for 2018-19 is now becoming due. Unlike previous years, no reminders will be sent, so if you wish to receive the April edition of *Sheetlines*, you must renew your membership before 1 March 2018.

We are pleased to announce that it is now possible to renew by online payment, as well as by bank transfer or by post, as detailed below.

Please note that annual membership cards are being discontinued and so your existing card will become your permanent CCS membership card.

**Subscriptions are now due for 2018-19**

Annual membership rates remain unchanged from previous years, starting at £15 for Ordinary membership. Full details of all rates are shown in the table inside the back cover of this issue of *Sheetlines*. Please make your payment to arrive no later than 1 March 2018. Early payment is appreciated.

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**Standing Orders:** You can also set-up a Standing order to make these annual payments automatically. The form can be downloaded[^1] or requested from the Membership Secretary.

**Gift aid:** If you have not already done so, and are a UK taxpayer, you can make your subscription go further by supplementing it with Gift Aid. Gift Aid brings added income to the Society at no cost to you. If you would like to do so, please download and complete the Gift Aid Declaration Form[^2] and send the completed form to the Membership Secretary, from whom the form can also be requested.

*Steve Braim – Membership Secretary*

[^1]: [https://charlesclosesociety.org/Standingorder](https://charlesclosesociety.org/Standingorder)
[^2]: [https://charlesclosesociety.org/files/GiftAidDeclaration.pdf](https://charlesclosesociety.org/files/GiftAidDeclaration.pdf)
The Special Emergency Edition (SEE): the good, the bad, and the intolerable
Rob Wheeler

Rationale
With the introduction of continuous revision in recent years, it has become possible to view a depiction of the entire country at something like a uniform date. Previously that was not possible: comparison of different areas was impeded by the fact that the revision dates were normally quite different. The one exception was 1938, when ARP Revision provides something like a picture of the entire country at once. However, there are a number of questions which need to be addressed about how complete the coverage was:

1. To what extent had there been significant changes on sheets for which no SEE was produced?
2. On those sheets for which there is an SEE, did ARP revision cover the whole sheet?
3. What categories of change since the previous edition were simply ignored?
4. What was left off for security reasons?

Drawing standards
In the course of looking at a couple of hundred sheets from different counties, I have seen nothing that requires a revision of what I wrote in Sheetlines 108 about the relationship between SEEs and the early Provisionals based on them. In particular, the additions of buildings and roads appear to have been copied faithfully. This is important because an earlier article on the manner in which buildings were generalised had relied on that relationship. I have remarked in the past that drawing standards vary, not just between sheets but also within a single sheet. In part, this is because different standards might be applied at different stages of map production.

Evidence for this is provided by Herts 34SE, where the North Orbital has been drawn in (evidently from the recent 1:2500 survey) with bounding lines corresponding to outer fences. Where it crosses railway lines, the railway has been carefully deleted within those bounding lines. At this date, the road only had a single carriageway and, to judge by the 1:2500, the bridges were only wide enough for that single carriageway. The surveyor on the ground seems to have decided that the depiction on the map he was sent out with was unacceptable and drew in the constrictions at the railway bridges. That at least is the only explanation I can offer for what appear to be a pair of enclosures at each railway bridge (figure 1). Incidentally, the road did indeed have square roundabouts but the width of the carriageway round these roundabouts was a good deal more uniform than is shown. Coarse generalisation along with inaccurate drawing

1 Rob Wheeler, ‘The Special Emergency Edition in Lincolnshire’, Sheetlines 108 (April 2017) 24-31. All the sheets I refer to are at Cambridge. In general, to see where a sheet can be found, check www.charlesclosesociety.org/SEE
seems to be characteristic of the preliminary work in the office. Figure 2, also from Hertfordshire, shows a different effect, whereby the Building Research Station is drawn with unusual attention to detail, including projections as small as 0.3mm. This is so different from normal field work (seen, for example, on the houses south of the Establishment’s site) that it is likely to represent the copying of a plan supplied by the establishment, copying done, for once, without the pressure to do it quickly and coarsely.

Fig 1, above: Herts 34 SE, North Orbital showing roundabout and railway bridge.

Fig 2. Herts 39 NW, showing Building Research Station.

Where names had to be cleared to draw new buildings, what happened seems to have depended on how pressed for time the draughtsman was. On Herts 39NW, the intriguing Booksellers’ Provident Retreat is neatly rearranged, losing only its apostrophe. In contrast Cheshire 41SW shows Albert by Winsford station, a partial survival of Albert Infirmary; part-deletion of names was normally avoided.

Occasionally buildings are found in the water, or at least the separation between water and land is lost. Figure 3 provides an example: in connection with the new dockside building on the left, the former edge of the dock has been removed but without troubling to replace it.

Fig 3. Essex n93 SE - Tilbury Dock.

One convention that seems to have caused genuine doubt concerned public buildings. In the Lincolnshire specimens I had examined, new public buildings
were drawn in solid black. However, the view that inaccurately surveyed additions ought to indicate their status by being unfilled seems to go right back to 1938. If a building like a school had new blocks added it was normally quite evident that they formed part of the school and they could be left unfilled; this is seen for example on Yorks 7NW or on new estates round Manchester. That this was gradually becoming policy appears from Cheshire 41SW where additions to a school drawn in solid black on the SEE are left unfilled on the post-war Provisional. Finally, one finds cases like the new school at Houghton Green on Cheshire 11 NW which is unfilled, unnamed and might be interpreted by anyone unfamiliar with the district as a rebuilding of the mine building previously on the site; perhaps this case indicates pressure of time rather than policy.

Bolton town centre presents a curious case of a structure (or rather a block) that was partly a public building. It had previously been a brass foundry but one end became an ambulance station. The SEE fills the whole block in black and it appears to be embraced by the label Municipal Buildings; as far as can be established the foundry continued to function.

**Geographical completeness of coverage**

Turning to the first of the questions I posed, there are actually two issues: (a) the criteria for carrying out ARP revision of a sheet and (b) whether the OS had access to the information needed to apply them. With regard to (b), one might suppose that local authority rating departments would have good knowledge of residential developments, while water supply organisations (often the same local authority) would know where they had laid water mains. Changes to industrial buildings and isolated houses without any form of mains services might be harder to keep track of. For the things that ARP revision was primarily interested in, intelligence ought to have been generally good.

Turning to (a), there are SEEs which record very few changes. For example, Durham 33SE shows one new house (or a small block) in the village of Howden-le-Wear and two in Witton-le-Wear. There are four small industrial establishments to which no changes were made, and it is difficult to see why the sheet was selected for ARP revision. In contrast, within the area of Lincs 78SE, there were half a dozen new council houses in Harmston village, one farm extension, a large house on the main road, and some building in the grounds of Harmston Hall in consequence of it having become a mental institution. The 1950 Provisional for the sheet also shows some 30 or 40 houses in Waddington village; in contrast to Harmston, I do not have firm dates for these but believe at least half to have been built before 1938. Yet Lincs 78SE was not thought to require ARP revision.

Why then was Durham 33SE selected for revision when Lincs 78SE was not? The topographical intelligence needed to prioritise one over the other must have been readily available; but it seems not to have been used. Consequently, the fact that some SEEs show almost no change does not tell us anything about the sheets that were not revised.

As for the second question, whether ARP revision covered entire sheets, there are numerous instances of small changes tucked away on farms outside the area
that might be selected as likely to have seen development. This tends to suggest that revision did actually extend to the edge of a sheet. This is backed up by instances on county boundaries where an area is covered by the sheets of two separate counties on different meridians and with different dates of (full) revision. In such instances, the sheet belonging to the older county in its pre-1938 state will show the ‘foreign’ county at its last-but-one revision. With a couple of exceptions, discussed later, all the buildings added at the last revision turn out to have been added (in a generalised manner). This can be seen to have been done right up to the sheet edges. In this case there would have been a good argument for stopping the redrawing at the county boundary; but this was evidently thought unacceptable. That suggests there was a demand from the ARP organisation that all the SEEs should be revised right up to the edge of the sheet.

Categories of change ignored
These overlapping sheets provide useful evidence of the types of change that might be ignored in ARP revision. Figure 4a shows an area of Lancashire adjoining the Manchester Ship Canal as it was in 1904-5; it is left unchanged on the Cheshire SEE. Figure 4b shows it as it was in 1926 with what looks like peat extraction under way; it is left like this on the Lancashire SEE. Whatever the landscape was like in 1938 it can have borne no resemblance to figure 4a, to such an extent that the map was well-nigh useless; evidently this was of no concern.

Failing to draw in the tramway system on figure 4a might be considered an insignificant omission, but it reflects a general principal that new railways were not to be drawn in on the SEE. Figure 5 shows one of the more extreme consequences. At the time of the previous revision in 1913, the North Eastern Railway was changing the alignment of its line at Monkseaton: the new alignment had already been fenced and the station buildings on the up side were built, but the permanent way had not been laid. The new lines, along with the new station, were opened in 1915. The ARP reviser in 1938 duly noted that the name Monkseaton station was in the wrong place; he must have marked it for deletion and added a Sta by the new one. He also drew in the new station building adjacent to the down platform. The line from Backworth can be seen coming in at the west side of the extract. This now curved round to the new station instead of continuing straight on as it had prior to 1915. The surveyor marked the continuation of the track for deletion, and this was done, which is why the railway is shown stopping opposite Ashbrooke Road. (He was doing more than he needed to: there are plenty of cases where superseded railways are left unchanged on the SEE.) But there seems to have been no procedure for drawing in the new track. Understanding the map is easy enough if one knows the history, but to anyone using it without local knowledge it would be a complete puzzle.
Overall, it appears that ARP Revision was expected to cover just roads and buildings. Anything else could be ignored and, if time was pressing, was ignored.

Security Deletions
Most RAF stations were in rural areas not included in the ARP Revision programme. However, Flintshire 10NW includes RAF Sealand. The original survey date was 1908-9. RAF Sealand was built in the 1920s, ie before the main Expansion Programme. It can be seen on the one-inch 7th Series sheet 109 (B//) of 1969 and I can vouch for the buildings being there in the 1970s. The SEE carefully widens Welsh Road (the A550) along the frontage of the RAF station but makes no attempt to update anything the other side of the fence. This might be more accurately described as an omission rather than a deletion.
Figure 6 shows an actual deletion, at Shellhaven on the north bank of the Thames estuary. The two empty areas surrounded by embankments were actually full of oil storage tanks and are shown on the previous edition (revised 1919). The embankments are bunds to contain any escape of oil. Some of the tanks can be seen on post-war mapping, and it seems highly implausible that the surveyor just happened to find the site undergoing refurbishment with all the tanks temporarily removed. Interestingly, there seems to have been no objection to showing other buildings. From the outlines one can see that it is an industrial installation of some sort but one can deduce little more. It was the close-packed circular tanks that were characteristic of a refinery and which declared themselves so obviously to be a potential target for bombing raids.

Another deletion took place on Suffolk 40NW where a Martello tower (‘Q’) in the middle of Walberswick is shown on the 1928 edition and still exists today (converted to a house) but was deleted from the SEE. Someone seems to have been over-pedantic in applying the rules.

Turning briefly from deletions on the SEE to deletions after the SEE, in Sheetlines 108, I mentioned the omission of the name Grimsby Municipal Airport when the early Provisional edition was prepared from the SEE. This seems to have been part of a more general aviation-related process. Aerodrome at Woodford on Cheshire 28NE is deleted post-war, likewise Aircraft works at Lostock on Lancs 86SE. Both sites played a major part in aircraft production and the inclusion of both names and buildings on the SEE seems to indicate that, with the exception of oil storage facilities, there was no suppression of industrial or civil-aviation facilities.

**Failures**

The foregoing sections attempt to answer the questions posed at the start. It would appear that, so far as roads and buildings are concerned, ARP revision does generally provide a good snapshot of England & Wales in 1938. But as might be expected with so massive a programme conducted in great haste, there were instances where sheets went out in an unfinished state, either because it was
simply forgotten that not everything had been done, or perhaps because the production schedule demanded that the drawing be sent on willy-nilly.

The overlaps along county boundaries provide a useful test here. In describing the procedure it will be useful to take as an example the Cheshire / Staffs border west of Tunstall. Staffordshire had been revised about 1897 and then again in 1922. Cheshire had been revised in 1908. Thus, the existing Cheshire sheets still showed Staffs as in 1897. Naturally, the surveyors (at least within Staffs) were working from Staffordshire sheets. Once those sheets had been drawn, the relevant Cheshire sheets were updated, copying the depiction of additions since 1922 and also drawing in generalised form the updating made at the 1922 revision of buildings that had had changed or been added since 1897. It seems an unnecessarily laborious process: some form of cut-and-paste would surely have been easier. Nevertheless, that is how it generally appears to have been done, and on most of the overlap sheets examined the process was followed thoroughly.

One isolated exception is Cheshire 57SE. The north-east corner and the whole of the central and southern parts of this sheet are in Staffordshire. The north-east corner is updated from Staffs 6SE (SEE). The rest of the Staffordshire part, so far as one can tell, has not been updated at all.

Runcorn comes within the Cheshire / Lancs overlap and examination of the Weston Point area south of that town (figure 7) suggests that two independent surveys have taken place. Both surveyors have added housing development to the south and east of the extracts; they handle it identically so it is of little interest. In the centre of the extract, the Cheshire surveyor has added Pigow Farm Road and nothing else. The Lancashire surveyor does not show Pigow Farm Road at all. Instead, he has cleaned off the existing fields and substituted what appears to be a recreation ground with a pavilion. He also adds factory buildings in the loop formed by the Runcorn Dock Branch. How could two surveyors present such different pictures of the area?

The answer appears to be that we have the work of two different draughtsmen working from the 1937 revision of the 1:2500. The man working on the Lancashire sheet evidently took the view that, because Pigow Farm Road did not lead anywhere and had no houses on it, he did not need to show it. He generalised the buildings on the recreation ground – although his labelling is at variance with the 1:2500, which describes the southern building as Club, the one to its NW as Pavilion and the one to its NE set at an angle as Shooting Range. Neither draughtsman saw fit to add the new railway line with sidings, immediately west of Pigow Farm Road. At first sight this might be dismissed as two different but permissible approaches to generalisation; but the factory could not legitimately be omitted, and the three buildings on the recreation ground are all larger than a pair of houses, so they too needed to be shown.
Before moving on to the final type of failure, it is necessary to say something about survey techniques. ARP revision used crude graphic methods to relate new buildings to detail that was on the existing map. This works well for ribbon development; it can cope with the odd new street here and there; but it cannot be used where there has been wholesale replacement of the previous landscape. Major new housing development was the principal cause for such wholesale replacement. Local councils will have had plans, whether these were council or private developments, and it is presumed that these plans were used in compiling the draft map which the ARP reviser took out into the field. Major industrial plants were another cause of wholesale landscape replacement: one much assume that plans were requested from the proprietors, but such requests may not have been acceded to so promptly. We have already noted the difference in style of the depiction of the Building Research Establishment, a difference which suggests it was drawn from a plan provided, but not at the same time as other detail was being incorporated so much more coarsely. It would be understandable if some of these plans arrived too late to be incorporated. That at least is the explanation I would put forward for the absence of the ICI works at Billingham (Durham 51NW), which Yolande Hodson drew attention to. Another example is Lysaght’s Steel Works at Scunthorpe, shown in figure 8. The figure is taken from the early Provisional; no copy of the SEE has been located. New houses can be seen along the west side of the road but the steelworks behind them has been omitted. This can hardly be a security omission: Lysaghts (otherwise known as Normanby Park) steel works was started in 1910, had been shown on the one-inch ever since the Popular Edition came out, and was not fundamentally different from the other Scunthorpe steel works which are shown on the six-inch. It looks as though the surveyor was told to ignore everything the

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3 Yolande Hodson, *Popular Maps*, Charles Close Society, 1999, figure 27 on page 161. The map illustrated is the early Provisional, but the SEE is essentially the same.
other side of the fence, expecting that the company (GKN by 1938) would provide a plan.

What came next

The SEEs were printed between Sept/Oct 1938 and Sept/Oct 1939. The maps were photographically reduced to 1:25,000 for the provisional edition of GSGS 3906. Redrawn, the information was used for the one-inch Second War Revision. That is the standard account, and, but it seems not to be the whole story. GSGS 3906 is not simply a reduction of the SEEs. Some of this relates to the method used for the production of that series and will be addressed in the forthcoming monograph on the series; but there are also enhancements, drawn to SEE six-inch standards, which seem intended to rectify the gravest shortcomings of the SEEs. Four instances are outlined below.

1. Lysaght’s steel works is inserted, along with the railways serving it (figure 9). The plan differs from that on the one-inch Popular, and this probably reflects improvements made in the 1930s when coke ovens were integrated with the blast furnaces. The railways serving the plant are added but without their earthworks.

2. At Monkseaton, a double-track railway symbol is drawn in along the new alignments.

3. The same is done at Keadby Bridge on Lincs 18NW. What had happened here was that in 1912-16 a Scherzer rolling lift bridge was built as a combined project of the Great Central Railway and Lindsey County Council, carrying road and rail traffic side-by-side at high-level, in lieu of a rail-only low-level bridge. The ARP reviser had drawn in the new bridge (at least its north or ‘road’ side)

4 Info from Richard Oliver based on TNA IR 65/29.
along with a building that seems to be the new Althorpe railway station, but the new alignment of the railway was not shown, nor was there any indication that the new building was a railway station. Before GSGS3906 was made, the new alignment of the railway was drawn in and the old bridge deleted. No attempt was made to move the name of Althorpe station (figure 10).

4. Whereas the previous three SEEs might well be regarded as unacceptable, the fourth case is odd and concerns the Hindley Green collieries on Lancs 94SW. Between 1927 (revision date of previous edition) and 1937, the collieries had closed and their pit-head buildings had been demolished. The SEE deleted the buildings and names, but left the railway lines in place. That was usual. GSGS 3906 deletes the railway tracks from Scowcroft’s Junction to the southern collieries and the line over the main railway as far as the workshops just south of the northern colliery group. This must be based on 1:2500 revision made in 1937 but only published in 1939. It is not clear why this length of industrial railway should have been deleted when so many more were left in.

It seems likely that many more instances of updating could be found by diligent search. They are most easily explained as updates to the master drawings of the SEE in readiness for a second edition. They will have been lost when the Southampton offices were bombed in 1941, which is why the post-war early Provisionals are based solely on the printed SEEs.

If this interpretation is correct, it poses the question whether any second edition SEEs were actually issued. It seems unlikely that any bear a title of that sort or they would have been remarked on. However, a ‘silent’ re-issue ought not to be ruled out. Comparison of specimens is not easy, so it seems possible that a few sheets exist in two different forms and that this has never been spotted.

Comparison between SEEs and one-inch Second War Revision (2WR) has proved more troublesome than I expected. The sort of problem that arises is shown in figure 11. The SEE shows Willington Square to consist of a road junction by a colliery with three streets of houses converging on it. 2WR shows additionally, an incomplete square with a church in the middle, all in the style of drawing used for additions. So where has this extra information come from? GSGS3906 turned out to be the same as the SEE. More puzzling still, there turned out to be a 1:2500 survey of 1942. That too was broadly similar to the SEE: the SEE’s Institute turned out to be Aged Miner’s Homes [sic], but that is hardly
significant. The solution to the puzzle was found by looking into the place’s history. Willington Square consisted of four ranges of cottages built in the first half of the nineteenth century and forming a sort of square. In 1928 progress dictated that a new arterial road be driven across the southern corner of the square. The SEE actually cleaned off the entire former settlement, apart from its name. On the one-inch, the square with its church, the new arterial road, and two of the radiating roads were already on the map prior to the war\(^5\); only the houses along the road to Willington were added as part of the War Revision process. The old square ought to have been cleaned off at this point but wasn’t. As for the church, I gather a Willington Square UM chapel was in existence in 1940. Of the three buildings, the SEE shows ‘floating’ north of the junction, the northern and the south-eastern are present on the 1:2500 and the northern looks as though it might be a chapel, although it is unlabelled on the map. Comparison with the modern landscape is unhelpful: Willington Square is merely a multi-level roundabout surrounded by out-of-town commercial development.

Thus, the message that emerges from this cautionary tale is that pre-war additions to the Popular can be indistinguishable in style from those resulting from the 2WR process; and that there was less interest in recording deletions than when the SEEs were drawn. If there is genuinely new material that appears on 2WR but not on GSGS 3906 it will take significant work to find it.

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\(^5\) They appear on the 2035 printing of Sheet 7.
Mere questions

Michael Spencer

I recently got interested in roads across the border between England and Scotland (don’t ask why), and obviously the first job was to find out where they were. I could imagine there might be a dozen or so, but I was not prepared to find almost forty.

At this point I stand in awe of the activities of the National Library of Scotland: all the maps of Scotland now out of copyright, available on my home computer, for nothing. And all zoomable, to bring out the tiniest detail, and with the six-figure National Grid reference displayed for the point of the cursor as it moves over the map. Gentlemen, my felicitations.

Clearly the early editions of the Six-inch and the 25-inch would have all the answers, showing all the mereings along the route, and the next job was to find out what the mereings meant.

So off to the characteristic sheets. The first difficulty was with the symbol “T.C.” which is defined as “Top of Cop.” The OED devotes three columns to the word “cop,” at the end of which one can only say that it means “top of something.” So the phrase “top of cop” is at best tautologous. Did the word “cop” have some unusual dialectal meaning, known only to the OS surveyors?

I have to admit I’ve not found the mereing “T.C.” anywhere on my (digital) perambulation of the border, but I have found a few oddities which raise questions in my mind. Let me take them in geographical order.

In the square NT8438 the boundary temporarily leaves the river (the Tweed) and runs for 400 yards at the root of the hedge on the north side of B6350, leaving a triangular salient of Scottish territory on the right bank of the river. It is not clear whether this used to be the course of the river, perhaps before the B6350 was built. A boundary stone at the west end of this stretch marks the departure from the hedge, and the start of a slightly kinked route back to the river. The boundary re-enters the river close above the weir to the north-west. From the boundary stone to the re-entry to the river, the First Edition 25-inch map of 1858 marks the boundary as “Undefined,” which means that “it is not and never has been related to any detail along that portion of its length”¹; though the map also shows that this portion of the boundary is defined as straight-line sections between boundary stones set up at the kinks. These seem to me to be a clearly defined detail (see figure 1).

This seems to lead to a requirement for a different mereing. From one stone to the next, the boundary is indeed not indexed to any particular detail; yet it is defined as a straight-line section, which doesn’t need such indexing. The mereing should have made this clear, perhaps by using “S.L.S.” or something like it. Why didn’t it?

¹ David EM Andrews, ‘Merely a question of boundaries’, *Sheetlines* 103, 33-34.
Are those stones still there? If not, maybe the mereing should have been “Def.” for “Defaced,” following “A boundary will be mered “Def” when the detail to which it is related has disappeared.”

The extract from the Google satellite view of the same area shows that the local farmers have no problem in recognising the position of the border (see figure 2). Nevertheless, I’m confused.

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2 Ibid.
At Scotch Knowe, NY561885, high on the moors beyond the Keilder Forest, the Six-inch map shows the Union Boundary as splitting into two arms, south-easterly and south-westerly, the junction indicated by a benchmark (see figure 3). This apparent anomaly results from the use of “Union Boundary” to indicate (1) the national boundary between England and Scotland, and (2) the boundaries between Poor Law Union Districts, an administrative concept which was abolished in 1929. No conventional sign distinguishes the one from the other.
Was the national border in those days considered of merely (sorry) minor importance?

Nevertheless, from modern maps, which carry a specific conventional sign for the national boundary, we can see that it follows the south-westerly arm; and that the south-easterly arm is in fact the boundary between Northumberland and Cumberland. We can also deduce that from the huge lettering “CUMBERLAND” on the map.

At NY402743, the border leaves the bed of the river (the Liddel Water) and crosses the railway twice before returning to the river (figure 4). Here we use the Second Edition 25-inch map dated 1900, sheet Dumfriesshire LIX.4 and LIXA.1 with Cumberland Sheet VI.3.7; the NLS gives this the more usable name Dumfriesshire 059.04 and 059A.01 of 1899. The map meres this short section as “C. Tk. O C. R.” - Centre of Track of Old Course of River. The English Six-inch, Cumberland VI of 1868, calls it “C. of O.C.R.” - Centre of Old Course of River, and extends this mereing into the undisturbed course of the river. (This map annotates the single-track branch railway from the junction a mile to the north as “Canobie Branch”, which is a misspelling of “Canonbie.” In fact the later Scottish 25-inch seems altogether preferable.) There seems no reason why two different mereings should have been used to define exactly the same thing. The modern Explorer 324, revised in 2000, shows the border still in the same place.

Evidently the railway works included the construction of a short embankment to divert the river away from the foundations of the railway, which was a lot cheaper than two viaducts. The 25-inch map shows the southerly part of this embankment, exposed to the full force of the current, as being faced with masonry. Clearly the works were not allowed to influence the position of the border, which for a short distance lies to the south and west of the railway fence, enclosing a parcel of 0.649 acres. This is a bit of Scotland in England. Who owns it? If it’s the Scottish proprietor of the opposite (right-hand) bank, how does he get access to it?

Presumably re-routing the border into the new bed of the river would have been more expensive (doubtless because of Parliamentary time) and more troublesome than it was worth. Perhaps there was no question of doing this, under the “doctrine of avulsion”.3 A long stretch of the border runs down the centre of the Kershope Burn, and where that stream has changed its course, the border has not. If these changes have been engineered, this must be for the same reason; does it also show the difference between an Act of Parliament and an Act of God?

Map extracts are reproduced by kind permission of National Library of Scotland

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**OS Custom Made – or should that be customer mad?**

**Peter Stubbs**

Over the years I have bought several Ordnance Survey Custom Made maps. If I gave a map the title such as *Blahtown District and Environs* this appeared on the cover and was repeated on the spine fold. That’s great.

However, the most recent one I bought, which has the new Ordnance Survey logo, was of *Badminton Horse Trials*, but when it turned up the spine didn’t have my title but OS CUSTOM MADE. Not only that but ‘Custom made’ was also on the silver area, so it’s on the spine twice. That’s really no use to me to identify what the map is of when it’s on the shelf with others.

I contacted Ordnance Survey who said that it wasn’t possible to change the spine to reflect the customer’s title as it used to:

‘Thank you for your email regarding the changes to the Custom Made service.

I have made some enquiries regarding the changes you have highlighted and confirmed that these changes did occur during rebranding as you suspected. This was to help distinguish the Custom Made maps from general *Landranger* and *Explorer* maps and to give the maps a consistent look.

We do not anticipate that this will change in the near future but I have passed your feedback to the service manager for their information.

I realise that this might not be the response you were hoping for but please be assured that we do appreciate your feedback, which may be used to influence how products are developed in the future.’

Well, yes, but it’s on the spine twice. Perhaps the one on the right could stay so that customers would know it was a custom map and the other could be replaced by, say, the name on the cover?

And another thing – why can’t I use ‘&’ in the name, as OS does?

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Below: The latest Custom Made map (‘Badminton Horse Trials’) with two Custom Made maps as they were (‘Coventry District and environs’ and ‘Hawkesbury and Environs’) and two standard OS maps, both with ‘&’ in their title.
Observations on positional accuracy improvement of 1:2500 mapping of Cornwall

John Cole

Attempts were made in Sheetlines 72 to deal with a single 1 x 1 km² map of Wadebridge where the 1:2500 scale was improved to 1:1250 accuracy standards and in Sheetlines 74 a similar area of rural land but with a small village at 1:2500, both having been ‘enhanced’ during the period 2001-5.

The subsequent availability of interactive mapping on the Cornwall Council website has facilitated a county-wide examination including the other eight towns or locations where the accuracy was similarly improved to 1:1250 standards with three objectives in view:

a. a limited National Grid position comparison with 1960s and 1970s revision
b. similar, respecting detail on the maps
c. comparison of interior property divisions in old town centres.

Unfortunately, exact overlays were not possible due to scale differences but the zoomable internet scales of 1:1000 and even 1:500 proved extremely useful whilst grid references were checkable by using grid intersections on the 1970s mapping falling on or close to identifiable detail and rounding off subsequent grid readings on the interactive mapping for both eastings and northings. Inevitably discrepancies were observed but far fewer than anticipated.

At this point I should mention that in 2011 I added a third map to those listed in paragraph one, which I described but did not identify in an article in Sheetlines 82 where I criticised revision work from air photos carried out at OS Headquarters. That this was to a degree unfair was revealed by the fact that points on the east and south of the map of Bugle village were exactly on the National Grid, whilst to the north and west, three metre discrepancies in the northings were apparent. This largely explained why a machine-plotted revision in 1980 could not be properly carried out. It was thus illustrative of reasons why the inflexible machine plotting (as opposed to the graphic plotting from air photos used hitherto) led to the programme of 2001-5.

Turning now to the nine locations where the accuracy was enhanced, the original revision dates and methods were as follows:

Launceston, 1952 revision point survey
Bodmin and Hayle, 1963 ground revision only but subsequent new editions aided by air photos
Newquay, 1966; Helston, 1967; Looe, 1969; Liskeard, 1969; Wadebridge, 1972 – all air photo revision at HQ followed by local ground completion
St Blazey / Par, 1969 local air photo revision and ground completion.

Comparison with the enhancement indicated that, at least in the town centres, Helston, Liskeard and Newquay were all better than anticipated regarding detail, and this proved consistent when outskirts were included. Only Wadebridge (as has previously been described) and to a certain extent Looe, which was a very difficult location survey-wise, proved otherwise.

There may be a degree of dispute regarding the value or usage of ground floor (only) property divisions in old town centres. Indeed, in early 1:1250 mapping days the rule was that reduced 1:500 or 1:1056 depictions might be used if there was no reason to doubt (from the outside) that such existed. Or, if taken from the previous 1:2500, they should be represented by pecked lines. Thus, it was a considerable surprise to find that such had
apparently been represented with precision at Launceston, Liskeard and Looe in particular and to a lesser degree at Helston and Newquay – indicating marked differences from the previous revision and that survey had taken place inside properties.

Opportunity was also taken to look at certain other towns still at 1:2500 accuracy and these included Bude, Callington, Fowey, Lostwithiel, Mevagissey, Padstow, Perranporth and St Ives. There was some surprise that St Ives/Carbis Bay and Bude/Flexbury/Stratton were not included for 1:1250 enhancement when smaller built-up areas such as St Blazey and Wadebridge were. Nor was it understood why the Tywardreath and Polmear areas of built-up were not added to Par. That said, no major detail differences stood out, short of being able to do complete overlays.

The availability of microfilm print-outs for ‘sweep’ blocks at St Ives south and south west, and between Redruth and Truro facilitated a further check of some fifty 1 x 1 km$^2$. Again, most National Grid position comparisons were surprisingly good with just a few discrepancies reaching a maximum of three metres. Detail ‘shapes’ were also better than anticipated, though it is probable that the usage of air photographs for subsequent revision in the 1980s and 1990s had removed a good many ‘embarrassments’.

It is not possible to be 100% certain about the quality of the positional accuracy improvement. At Wadebridge for instance some short lengths of old hedge-bank still extant had not been reinstated and there were also some doubts about the centre line accuracy of overgrown examples inside or around the built up area. Shortcomings were also listed at the village of Malpas (most of which OS immediately corrected) and to a lesser degree at Bugle. The major benefit seemed to be in the form of National Grid position – the worst example spotted seemingly a 500 metre eastings error at Looe Island detected at the time the 1:10,000 scale map was compiled. Otherwise the investigation I have described seems to be a vote of confidence in detail depiction on previous revisions even when upgraded to 1:1250 accuracy.

A couple of other related observations are added in conclusion.

In *Sheetlines* 102 I added a comment (on an accuracy article in the previous issue) regarding the category AR which appears on the OS internet tile selector. In fact it indicates a mix of 1:1250 accuracy and ‘reformed’ 1:2500 mapping, the whole published at the latter scale. This category in fact applies to all nine Cornish locations listed above. However, when the 2001-5 programme was completed I was mystified to discover that at St Blazey a further seven 1 x 1 km$^2$ maps had been added; a further eight at Looe as well as two at Fowey and four at Camelford. In spite of communication with OS I was unable to establish a reason for this other than confirmation that the maps concerned were still only 1:2500.

During the mid to late-1980s some fifty-six locations, mainly small towns, were upgraded to 1:1250 most of which seemingly ‘contracted out’ but validated by OS. Truro was one such. Comparison with the previous 1:2500 revealed a good deal of disagreement and since it could be established that the 1:1250 was incorrect simply by looking in shop windows, I decided to investigate this on retirement. In fact, unobtrusive inspection in the shopping centre indicated twenty plus mistakes with more suspected, and in several instances the original 1:2500 was correct. Moreover, the contractors had resorted to pecks or even a ‘tick’ representing a street frontage division. And in some cases accepted what could be seen from the air photograph, the validation of this appearing to be ‘half hearted’. On the latest versions of the 1:1250 map some correction to interior divisions have been noted and it is suspected these have resulted in casework for HM Land Registry.
List of 1:2500 scale 1 x 1 km² mapping with approximate areas of 1:1250 scale accuracy. (Excluded are 1:1250 scale locations: Illogan - Penzance - Newlyn, Camborne Redruth, Falmouth - Penryn, Truro, St Austell - Crinnis, Saltash and Torpoint.)

| Location        | SW5536 75% | SW5537 35% | SW5637 90% | SW5638 13% | SW5737 10% | SW5738 50% | SW7861 4% | SW7961 43% | SW8060 10% | SW8061 82% | SW8062 10% | SW8160 37% | SW8161 90% | SW8260 83% | SW8261 92% | SW8262 66% | SW8361 13% | SW8362 70% | SW8363 7% | SW8461 8% | SW8462 10% | SX0566 48% | SX0666 5% | SX0666 48% | SX0667 45% | SX0765 58% | SX0766 100% | SX0767 48% | SX0865 15% | SX0867 5% | SX0566 48% | SX0666 5% | SX0666 48% | SX0667 45% | SX0765 58% | SX0766 100% | SX0767 48% | SX0865 15% | SX0867 5% | SX0667 45% | SX0765 58% | SX0766 100% | SX0767 48% | SX0865 15% | SX0867 5% |
|-----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                  | SW9772 5%     | SW9871 14%  | SW9872 50%  | SW9971 17%  | SW9972 95%  | SX0071 4%   | SX0072 8%   | SX0553 20%  | SX0653 66%  | SX0654 37%  | SX0753 60%  | SX0754 45%  | SX2453 25%  | SX2455 17%  | SX2456 85%  | SX2554 30%  | SX2555 14%  | SX2556 15%  | SX2463 18%  | SX2464 62%  | SX2564 100% | SX2565 15%  | SX2664 20%  | SX2665 3%   | SX3283 30%  | SX3284 26%  | SX3285 62%  | SX3383 60%  | SX3384 67%  | SX3385 20%  | SX6526 9%   | SX6527 66%  | SX6528 25%  | SX6626 25%  | SX6627 70%  | SX6628 92%  |
| Hayle (7)*        |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Newquay (15)     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| St Blazey (5)    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| E & W Looe (6)   |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Liskeard (6)     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Bodmin (10)      |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |

Note. Numbers of maps quoted do not necessarily agree with original OS list of 09/01/01 both Newquay (17) and Bodmin (12) being examples though SW8363 at the former with 6% housing and hotel may have been subsequently included. The original figures for Launceston and Liskeard could not be reconciled with the built-up area. Coastline detail (excluding built-up limit) is at reformed 1:2500 scale accuracy with only limited alterations to Mean High Water mark.

* A degree of doubt exists about SW5538 which appears to have been included in the original OS list. It comprises 20% of housing and chalets - mainly the latter.

Percentages were arrived at using a hectare overlay at 1:25,000 scale.
List of revision points

The following list is the number of 1 x 1 km² 1:2500 maps and albums containing revision points for survey and or compilation at that scale.

**Cornwall**
- Launceston: 5
- Saltash: 4
- Torpoint: 5

**Devon**
- Brixham - Goodrington: 21
- Dartmouth - Kingswear: 12
- Kingsbridge: 5
- Okehampton: 12
- Plympton: 4
- Plymstock: 7
- Salcombe: 7
- Sidmouth: 10
- Tavistock: 19
- Tiverton: 7
- Totnes: 15

(other south Devon locations containing one or two compilation maps: Plymouth Tamar Side plus dockyard high water mark security area, Plymouth Holt Wood, Bovisand south, Heybrook Bay, Wembury, Newport Ferrers, Bigbury-on-Sea, Thurlestone, and Stoke Fleming.)

**Dorset**
- Broadstone - Upton: 46
- Hampreston: 2
- Holton Heath: 6
- Swanage: 9
- Wimborne: 7

**Glamorgan**
- Ynys-y-bwl: 2

**Gloucester & Somerset**
- Bristol Stoke Park: 4
- Bristol Hanham south: 3

**Hampshire**
- Emsworth & Havant: 19
- Waterlooville: 18
- Portsmouth Harbour: 12
- Portsea Island east: 3
- Gosport north: 5

**Kent & Essex**
- Swanscombe & Thurrock Marshes: 10
- Braintree: 29

Cheshire
- Eastham Airport (Ellesmere Port): 6

**Surrey**
- Epsom south: 12

**Sussex**
- Burgess Hill: 15
- Ditchling & Keymer: 11
- Haywards Heath: 21
- East Grinstead (part): 9
- Peacehaven & Newhaven (part): 20

**Staffordshire**
- Alsager: 7
- Biddulph: 9
- Kidsgrove south & east: 4
- Stoke-on-Trent south: 3
- Tamworth: 5

**Warwickshire**
- Birmingham east & Coleshill: 37

**Lancashire**
- Chew Moor - Little Hulton: 21
- Delph - Mossley east & west: 39
- Pendlebury north: 13
- Prestwich west: 12

**Yorkshire**
- Bradford south east – Wakefield: 88
- Castleford south - Knottingley: 28
- Sheffield east: 35
- Redcar Bran Sands: 4+

**Lanark**
- Pollok Grounds: 4
- Shotts: 8

**Lothian mid & west**
- Bo’ness: 13
- Broxburn & Uphall: 7
- Fauldhouse: 2
- Linlithgow: 10

Note: Many of the Revision Point albums (containing photographs) for Cornwall and west and south Devon are viewable at City of Plymouth Archives and Records.

*John Cole*
**Addendum:** Omitted from the list of ‘Locations and Methods 1:2500 National Grid maps 1944-57’ in *Sheetlines* 108 were the following: Yorkshire: Sheffield east (Brinsworth - Killamarsh), Redcar Bran Sands and Cheshire: Eastham Airport (Ellesmere Port).
The 1943 South Downs map

Mike Nolan

Prior to 1979 the Royal Army Educational Corps had been responsible for map reading training in the army. In about 1979 the Directorate of Military Survey took over this role. As a first step it undertook to design and run a new course at the School of Military Survey to train unit map reading instructors of all arms how to instruct the Common Military Syllabus (Recruits) in the subject of map reading. The first two-week course was run in mid-1980 at about the same time as the formal opening of the then recently rebuilt barracks by H.M. Queen Elizabeth II. The course, aptly named Map Reading Instructors’ Course or MAPRIC, quickly became accepted by the army as a most useful course. With modifications, and doubtless with improvements, it has continued to the present day.

As with map reading over the preceding years, recruits were taught on series M726, the military version of the 1:50,000 scale map of Great Britain but shortly after the MAPRIC got under way, it was suggested that a filmstrip of conventional signs and marginalia appearing on series M745, the 1:50,000 scale series of Germany, should be produced and that a training area map of Salisbury Plain should be produced to the specification of Series M745, but the idea never came to fruition.

As is often the case, this proposal was simply a case of “reinventing the wheel”. Recently found in the Defence Geographic Centre Map Library is a map of the South Downs conforming to the specification of Series GSGS 4250, the 1:50,000 scale map of France which was to be the operational tactical scale map used on D-Day and during subsequent operations on the continent. The familiar series GSGS 4347 of Normandy at 1:25,000 scale was also used by the infantry in Normandy, where its design showing field boundaries, orchards etc., was found invaluable in the close “bocage” country but it was originally conceived as an artillery map and it did not extend as far inland as the 1:50,000 scale series.

The South Downs map was produced as an aid to instruction in map reading and was produced on Series GSGS 4250 sheet sizes thus covering 30 x 20 kilometres of ground on a sheet 76 x 55 centimetres overall, a sheet size which could be printed in the field on the Demy-sized presses with which the printing trucks of the Field Survey Companies RE were equipped.

The symbols on the face and in the two Reference boxes were drawn to Series GSGS 4250 specification.

No grid data was given but the grid sheet-corner values and 10 kilometre ladder grid on the face conformed with that on GSGS 4250 and a GSGS 4250 type Convergence Data box was included.

The one example so far found has an imprint of 21,000/10/43/13 S/459, indicating that 21,000 copies were printed in October 1943. This map found in the Defence Geographic Centre is now held within the Charles Close Society archives in the University of Cambridge Map Library.

Extracts opposite from the map have been reproduced by kind permission of the Syndics of the Cambridge University Library.
SOUTH DOWNS

NOTE: This Special Sheet conforms to the style of G.S.G.S. 4250 of France, and has been published as an aid to instruction in Map Reading.

REFERENCE

- Railway, Double line
- Single line
- Under construction
- Narrow Gauge line
- Boundary International
- Fort
- Power Cable, Aerial Railway
- Aerodrome
- Landing Ground
The Ox Rock: missing from Ordnance maps for 100 years

David I. Walker

According to its title, the map of the county of Sutherland made in 1833 by Burnett and Scott and revised in 1853 by Hector Morrison, another local surveyor, ‘was made on the basis of the trigonometrical survey of Scotland’. Checking this out, the writer found that Morrison’s revision (figure 1) compared very well with the later Ordnance map (figure 2) but in addition showed the islet of Skeir-an-daif, which was not shown by the Ordnance until a hundred years later.

Of nearly a hectare above high-water level,¹ this islet was shown on the Admiralty chart (figure 3) as Ox Rock, translated from ‘surveyor’s Gaelic’ (skeir-rock, damh - ox). It is unsurprising that the Ordnance map in other respects resembles the Admiralty chart. But it is at first surprising how closely the local surveyor’s map published in 1853 resembles the chart not published until 1857.

Further investigation showed that Morrison’s client, the Duke of Sutherland, possessed ‘fair copies’ dated around 1846 of Commander Otter’s charts published in 1857. ‘Fair copies’ were normally subject to scrutiny by the Admiralty Hydrographer himself before being engraved for publication, but in this case Admiral Beaufort permitted Otter to share these with the Duke.²

Subsequently the writer found an easier way of comparing maps like this by changing the transparency of the georeferenced version on the NLS website (figures 4 and 5). Presumably it was the aerial survey that led the Ordnance Survey to add the Ox Rock to Landranger sheet 15, revised in 1973 (left). This reminded the writer to examine a photograph (above) that he had, quite coincidentally, taken a few years earlier from the viewpoint at NC 120330 on B869 near Drumbeg.

Opposite page: Maps of Eddrachillis Bay, by courtesy of National Library of Scotland

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¹ Brian Adams, ‘The British Isles - How Many’, Sheetlines 29, 1991, sought to count islands exceeding half an acre or 0.2 hectares.
² National Library of Scotland, Sutherland Papers, Dep.313/3631/1-6; UK Hydrographic Office, LB 15, p290, 8 August 1848.
Figure 1 (top left) from Map of the County of Sutherland by Burnett and Scott as revised by Hector Morrison in 1853.

Figure 2 (top right) from OS one-inch sheet 107 surveyed in 1873 and published in 1882.

Figure 3 (left) from Admiralty Chart 2502, Eddrachillis Bay, published in 1857.

Figure 4 (left) NLS website (screenshot) Georeferenced map, selection as shown, overlay transparency 100%.

Figure 5 (right) NLS website (screenshot) as fig 4, overlay transparency shifted to 0%.


Bing Maps and Ordnance Survey

Michael Spencer

Sheetlines 95 contained an article by Karen McGrath, responsible for consumer marketing at Ordnance Survey, about the commercial use of modern OS products by third parties. She wrote:

“... cartographic publishers may now license and re-publish Ordnance Survey mapping information published at scales of 1:25,000 and 1:50,000 as sheet map series.”

Now the word license is well-established and means (in this context) “to obtain authorisation for the publication of [any text] [by another party]”. It clearly does not include the idea of “to have copyright [in a published work] re-assigned to another party.” Ms McGrath’s use of “sheet map series” is not well-defined in her article, but it would seem to mean “published in separate sheets which together cover a larger area than can be conveniently (or at all) fitted on to a single sheet.” Moreover, it’s unfortunately not clear whether “as sheet map series” refers to the permission granted to “license and re-publish” or to “[OS] ... information published ...”

The Scottish Mountaineering Club, which is the go-to authority on all matters of hillwalking and rock climbing in Scotland, published a list of Scottish hill-tops above 3000 feet as long ago as 1891. These hills were called “Munros,” after the name of the original author. The list was revised in accordance with updates to the relevant Ordnance Survey maps, and the most recent complete edition appeared in 1997, showing 511 tops and separate mountains. Lists appearing after that date have included only the 284 summits categorised as separate mountains — there appears to be no real justification for so far diluting Munro’s designs, but we have to acknowledge that Munro’s criteria for categorising summits as one or the other were both subjective and inconsistent.

List of what are currently designated as separate mountains can be found on the internet. The Scottish Mountaineering Club provides a 282-item online list and this list is of interest to us, because every item in it is keyed to Microsoft’s Live Search Maps project under its trade name of Bing Maps. One just clicks on the tag “O/S Map (Bing)” at the end of each item, and one is presented with a screenful of very generalised mapping centred on the peak in question. After a few seconds, the map appears as a 1:50,000 Landranger extract, which can be zoomed out to 1:25,000 by rolling the wheel on the mouse. Three interesting points arise.

1 Karen McGrath, ‘Use of OS data by commercial publishers’, Sheetlines 95, 3-5.
4 www.smc.org.uk/hillwalking/munros
First, the data provided seems to be very much up to date. Many spot-heights appear that are not shown on printed *Explorer* maps dating from about 2000; though it is hard to find differences from maps bought new last week.

Second, the map can be panned to cover the whole of Great Britain and the immediate islands, in a single layer. This does not seem to me to hold closely to the idea of ‘sheet map series’, assuming that idea refers to the licensing and re-publication.

Third, down in the bottom right-hand corner of the screen appear the two annotations “Image courtesy of Ordnance Survey” and “Copyright 2017 Microsoft.” These do not seem to comply with the idea of “licensing”, nor do they suggest that the OS copyright remains undisturbed.

I should be very grateful to have authoritative comments on my misgivings as presented here.

*Above:* Screenshot of The Cuillins of Skye on the SMC Bing / OS map. Incidentally, ‘Coich Buttress’ (centre left) should be ‘Cioch Buttress’.

*Right:* enlargement of the acknowledgements in bottom right corner of the screen display
Shuckburgh’s papers at National Library of Wales
Michael Freeman

I came across these papers while studying the history of visitors to Snowdon; many of the earliest were scientists and surveyors. I have several references to Shuckburgh being on Snowdon.

When John Matthews, a surveyor of Wrexham, Chester and later of Aberystwyth, toured Wales in 1778 he wrote in his journal:

‘[We] were much disappointed at finding his Houses [Mr John Closes in Nantperis] pre-engaged by two gentlemen who were come to ascertin the altitude of Snowdon, Sir George Shuckburgh and Mr J Lloyd. They informed us they had ascertained its altitude the morning before, and assured us from the most accurate observation as well as the most exact calculation, they computed its Altitude at 3,500 feet. Taking this level from the sea.’

Matthews and his colleague planned to climb Snowdon and wrote ‘We had the greatest encouragement from the expedition of Sir George Shuckburgh who informed us, the Barometer had risen considerably.’

Sir George Augustus William Shuckburgh (after 1794 known as Sir George Shuckburgh Evelyn) 6th Baronet (1751-1804) was a politician, mathematician and astronomer. Between 1774-1779 he defined the relationship of the temperature of boiling water to barometric pressure. This latter variable changed both with the ambient meteorological conditions of the moment and the height above sea level at which the calibrations were made.

There is no obvious explanation for why a list of Shuckburgh’s instruments should be in the Pitchford Hall collection (Pitchford, Shropshire, 6 miles south east of Shrewsbury): I assume that there was some family or business connection. I will continue to search for the reason for this link.


There are two items in the collection with the same numbers – this is the unique reference number: “CELL 8 14/2/3, Box XIV, File 2, nos I/18-20”

The lists are not dated but it was presumably compiled soon after his death in 1804.

Ms I/18-19 is a list in a clear hand, numbered from 1 to 91 plus several un-numbered items, some of which are identified as ‘not in the collection’ and some

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1 Honorary Research Fellow, National Museum of Wales, michael.freeman9@btinternet.com
2 John Lloyd, (1749-1815), of Wigfair, lawyer and dilettante. He was known as the 'The Philosopher' which indicated his interest in natural philosophy - including mathematics, physics and astronomy. A sale catalogue of his large collection of books and philosophical instruments, including some surveying instruments, entitled 'Bibliotheca Llwydiana' may be found on Google books.
3 Anon (J.M. John Matthews] Tour through N. Wales in the Year 1778, Central Library, Cardiff, MS 1.549, pp. 26-27.
4 Source Wikipedia.
numbered items are also marked in what appears to be the same hand as ‘missing’. Items without a number begin: [no number]

**Ms I/20** is a similar list in the same order but in a different hand to Ms I/18-19. It is numbered in groups with numbers for each group starting again at 1 (recorded below as numbers in [ ] ). It has some more detail of the thermometers (between nos. 47 and 48 in the original list) and other items (between 68 and 69). It is annotated in pencil giving the numbers of the items in the original list.

The lists are transcribed as closely as possible to the originals. D = ditto.

1 A Refracting Telescope 5ft 8in focus by Martin [missing
2 A Standing Culpiipers refracting Microscope
3 A 4 inch Dipping-needle, rolling on planes, by Ramsden
4 A large Hydrostatic balance with complete Apparatus ] missing
5 A Solar microscope by Dollond; and a glass prism for showing the refrangibility of the rays of light.
6 A Chest of chemical mixtures for making mineral waters
7 Case with elliptical compasses; A 12 inch Gunter’s slide, and a box Dialling Sector, by Martin and Sisson.
8 A 50 ft steel measuring chain – by Baradelle at Paris
9 Three 3 feet rods (2 of deal and one of brass) laid off from Birds scale in the possession of the President du Suvio [looks like Saron ms I20] – by Baradelle at Paris
10 Hydrometer with copper ball, by Martin D with Ivory ball.
11 Pair of Beam-compasses 15 inches deal beam D of Mahogany [missing
12 Pair of brass compasses with moveable leg’s [sic] for distances of 15 or 18 inches
13 Pair of proportional Compasses; by Martin | not in the collection
14 6 inch brass Sector, with a protractor and nonius by Martin
15 Two horn protractors
16 One D Brass with nonius
17 Two cases of mathematical instruments for Drawing
18 Pair of Gunner’s callipers
19 Level in Mahogany with a 5 inch Gunter’s Quadrant
20 Three inch Terrestrial Globe mounted

[not numbered] Two feet Guntwer’s sliding rule ] missing

[**From here on, ms I/20 restarts numbering at 1**]

21 [1] Hadley’s quadrant, 18 inch radius by Martin
22 [2] Hadley’s quadrant, 12 inch radius by Martin
23 [3] Hadley’s quadrant, 2½ inch radius with nonius to minutes by Ramsden
25 [5] Artificial Horizon by Ramsden.) This is a curious instrument.
26 [6] Goncometer (invented by Mayer made by Martin
27 [7] Ring dial – 9 inches diameter by Martin
28 [8] Ball and Socket with double lens for a Camera Obscura
29 [9] Hydrostatic Balance by Martin ] marked N° 4 in the Collection
30 [10] Two sets of scales and weights
32 [12] Sett of bars for giving magnetism by Navine
33 [13] Four inch brass Gunter’s quadrant with a Nocturnal
34 [14] Twenty inch achromatic telescope by Dollond ] uncertain
Six inch D\textsuperscript{o} by D\textsuperscript{o} uncertain

Four inch reflector by Jackson

Case with electrical balls

Pocket compass with needle in a silver case; by Dollond

[not numbered in ms I/20] Small box compass swinging on Gimbals for a boat or Post Chaise by Dollond missing

A 33 feet or 2 pole measuring tape – the 50 feet missing

Rowley’s quadrant foot radius on wood

Sutton’s D\textsuperscript{o} 5 inch radius

Jovilabium for Jupiters moons

Burning lens and reading D\textsuperscript{o} with spectacles of green glass convex 14 inch focus

Cubic inch of ivory

Nine inch refracting telescope with a spirit level; by Ramsden

[no number] Antimonial cups missing

[not numbered in ms I/20] Dissected cone in a box by Nairne

[Upright barometer reservoir 6 inched by 4

Diagonal barometer unfilled not in the collection

Ombrometer or Pluviometer not complete Thermometers filled and without scales are in the box No. 82

The collection of Thermometers containing Sir Georges valuable standard Thermometers are not in the collection of Instruments.

[A 20 inch thermometer to boiling water – Mahogy: Cased Glass by Martin

Seven inch pocket Do from 45 \degree to 220 \degree with Ivory Transparent Scale and Shagreen case by Dollond

Two other Do and one [symbol for mercury] the other spirit

Therm. Tubes filled with [symbol for mercury] or spirit unmounted

The largest Receiver: 5 inch wide by 7 in: high

Variety of Receivers & other Apparatus for the air pump

The Thermometers are missing

Great variety of tubes for Barometers, Thermometers, Electrical & Pneumatical Experiments

Plano-convex lens 34 inches focus and 4½ aperture: [segment of a sphere 2½ inches radius & 3½ aperture

Quantity of Capillary Tubes – Glass Wire or Thread

Various Blow Pipes

The following are not numbered in ms. I/20

Waywiser with 6 inch wheels by Dollond [added to ms. I/20: for measuring distances as far as 4 miles]

A large standing Air-pump Plate 14¾ inches Diameter by Haas & Heveter

Large receiver to D\textsuperscript{o} 6 inches wide & 14½ high by D\textsuperscript{o}

D\textsuperscript{o} 11½ 14½ by Navine

D\textsuperscript{o} 13 17 by D\textsuperscript{o}

Hollow prism for experiments on refraction by Haas

Speaking trumpet – by Finchall / Finchall not in the collection

Letter copying and Seal press, by Bolton and Watt

Drawing board and parallel scales by Marquois
57 Figura anatomica Osteologium exhibens
58 Figura anatomica exsiccatum, car in situ et vasa sanquinis exhibens

[From here on, ms I/20 restarts numbering at 1 (again)]

[no number] [2] Pair of Adam’s Globes 12 inches diameter } not in the collection
60 [3] Pair of Senex’s Globes D
[no number] [4] Pair of Globes by Martin not in the collection
61 [5] Universal Equatorial with 7 inch circles and complete apparatus by Ramsden. N.B. This is a most valuable instrument, being adapted to answer the several purposes of an equatorial, altitude and Azimuth instrument, and Theodolite for surveying.
62 [6] Two feet reflecting Telescope by Martin. – N.B. This instrument has two eye pieces, one contains a curious micrometer for measuring small angles on a principal invented by Martin, which he applied in common to his telescopes and Microscopes.
63 [7] Half second gridiron Clock, by Arnold
[no number] [8] An Orrery after Ferguson’s plan by C. S. missing
64 [9] A Whirling table for experiments on central forces, to explain the law of the planetary motions, after Ferguson’s plan –
65 [10] A tide table after Ferguson’s plan
[no number] [11] Twelve inch Electrical Globe not in the collection
66 [12] Two feet Astronomical quadrant on a stand with ball & socket to place it in any position and render it useful in surveying by Martin. N.B. The one of the telescopes to this instrument have been supplied since its first construction (if not both) it having been made originally with plain sights –
[no number] [13] Diagonal Barometer, not in the collection
67 [14] Two portable barometers by Ramsden, these were the instruments used by Sir George in measuring the height of mountains, from which he determined a valuable theorem of great use in the reduction of observations of this nature. The Barometers are numbered 1 and 2.
[no number] [16] Camera Obscura not in the collection
[no number] A set of Thermometers, not in the collection
17 A standard Thermometer mounted in brass with a nonius, moveable lens & Micrometer screw-scale extending from 0° to 218 - Ramsden
18 A Small D° in in a Shagreen Case Scale from 46° below 0° to 212 – by Dollond
19 A d° mounted in Ebony & Ivory Scale 25°-0° to 122°
20 Ditto - D° 2°-0° - 124
21 Ditto mounted in Brass silvered 67°-0°- 735
22 Two simple object glasses bro’ from Bologna; one 37 En: feet focus ye other 86 feet by Jas: Brun
[23 – nothing listed]
24 Large Equatorial Instrument – missing
25 Iron supports to the N. & S. ends of the Potar Eyes (?) to D° } missing
26 Iron Conical ??? covered with copper missing
27 A bisected eye glass micrometer, adapted to the above Lens * by Casy missing
[no number] [28] Sideral regulator by Arnold goes 4½ months. N.B. This regulator supposed to be packed up with large equatorial; but equatorial no. 61 is incomplete without it as well as the transit instrument no. 69.
[no number] [29] De Luc’s hygrometer by Haas not in the collection
[The following have no numbers in ms I/20]
A Telescope, of red & green glass ???dges by Cary missing [listed only in ms I/20]
69 Portable Transit instrument with a Telescope 20 inches focus by Troughton
[no number] Chronometer or Time-keeper by Arnold, goes 3 days 7 hours in a
mahogany box 12 inches square 11 deep not in the collection [by Arnold according to
ms I/20]
70 Brass beam 27 inches long with scales and weights, and a complete apparatus for
statical and hydrostatical experiments
[no number] brass cube 5 inche each side
71 Brass Cylinder 4 inches diameter and six high
[no number] A Beam-compass 5 feet long and divided brass scale with microscopes.
N.B. These 4 last articles made by Troughton [This line in ms I/20 only]
72 brass sphere 6 inches Diameter [by Troughton according to ms I/20]
[no number] Three sets of weights to the above apparatus the whole made by
Troughton
N.B. no. 70 and 71 are instruments made for Sir George during the pursuit of his
enquiry into a method for obtaining a universal standard of weight and measure, a
description and drawing of them are published in the Philosophical Transactions, with
an account of a series of experiments. [This sentence in ms I/18-19 only]
A Beam Compass 1 foot long, with divided scale & Vernier, in silver by Troughton
missing [In ms I/20 only]

[The following are not in ms I/20]
73 Pair of Scales on a brass stand, with supporting pieces and Ivory index
74 Fine pair of scales in a Glass Case with a complete set of weights
75 A Clock having a moveable point of suspension for the pendulum by which the
difference in the length of two pendulums vibrating a given number of times may be
ascertained and from thence a deduction of the actual length of the second pendulum, a
desiderata of the greatest importance to science. Sir George tried some experiments with
this clock at Greenwich (Royal Observatory) which owing to a defect in the apparatus
were not quite satisfactory; it was his intention however to resume his experiments at an
early period and when the defect above mentioned could be remedied but his
increasing ill state of health and death which followed soon after put a stop to his
inquiry. [not in ms I/20]
76 Weather gauge
77 Tripod stand --- 78 Do
79 Beam-compass in deal with a lens for reading off
80 A large glass measure
81 Tripod stand from which a pair of scales are suspended with 4 weights
82 A Box containing a number of Thermometers & Glass tubes
83 A pulu Glass
84 A waywiser for a carriage
85 Pocket dial with compass
86 Do without compass
87 Reflecting Telescope
88 A sector in Box-wood
89 A small square
90 A two quart measure
91 A box with small weights

[end of list]
Greenspace, announced with a fanfare in July 2017, is one of the facilities available on the OS Maps Online website.¹ The website itself is a hugely valuable resource, providing unlimited access to the entirety of Landranger and Explorer mapping on desktop and mobile computers for a fee of under £20 a year. Clearly a ‘must-have’ for every map user. The addition of the Greenspace layer would be expected to make the site an even more valuable asset.

But what to make of Greenspace? The concept is admirable; who could not want a map of publicly accessible open space? The implementation, however, is deeply flawed; so much so as to make the map almost useless.

The flaws appear everywhere and are sins of omission and commission. Omitted are many (but not all) parks, gardens, woodlands, National Trust properties and open spaces already shown on traditional OS mapping. Most astonishingly, open Access Land, shown on Explorers, is ignored. On the other hand, many of the areas which are depicted are, at best unhelpful, at worst, simply wrong. These include private facilities such as golf-courses, sports grounds and allotments; buildings such as leisure centres, swimming baths and churches; and car parks.

Equally baffling is the underlying base map, described as the ‘Standard’ map. This seems to be not only out-of-date, showing, for example, old buildings no longer shown on modern OS mapping, but also omitting landscape features such as Gilwern Hill, near Abergavenny.²

John Davies

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¹ www.ordnancesurvey.co.uk/shop/os-maps-online.html
² Thanks to Alan Bowring for this and several other examples.
OS Greenspace maps of Haworth, West Yorkshire (above) and Woldingham, Surrey (opposite) compared with Explorer maps, showing some of the oddities and anomalies of the selection of ‘green spaces’ and some of the deficiencies of the underlying ‘Standard’ base map.

In Haworth, the large areas of open access moorland east and west of the village (Brow Moor and Penistone Hill) are ignored, but the walled cemetery on the latter is indicated as a recreational area, as are the village's other churches, chapels and graveyards. The base map indicates the station on the preserved Keighley & Worth Valley Railway with the National Rail double-arrow logo.

Open access countryside south of Woldingham is similarly ignored, in favour of the private members-only North Downs golf course. The tiny walled burial ground at Marden Lodge was for nuns when Marden Park housed a convent, and is even more ‘private’ than a municipal cemetery. The access points to Woldingham Village Green are meaningless, as it is unfenced on both the north and the east sides. The base map omits the prominent wireless masts south-east of the village. It also omits grid lines.

In Woodford Green, Essex, the attractive open area opposite the station (Pankhurst Green) is ignored, as is the entirety of Epping Forest, whilst the base map labels the adjacent building as Government Offices – these closed almost twenty years ago.
At the heart of the rugged Forest of Bowland Area of Outstanding Natural Beauty lies the pretty village of Dunsop Bridge. And at the heart of Dunsop Bridge is the delightful Puddleducks tea room. But is it at the heart of Britain?

Here’s what it says on the back of the menu:

‘The exact centre of the United Kingdom, with its 401 principal off-shore islands, has been determined to be at SD 63770 56550 Hanging Stones. The nearest village is Dunsop Bridge. The land is owned by United Utilities and, although not accessible to the public, walkers are permitted except during the grouse season. To commemorate the Ordnance Survey classification British Telecom [remember them?] chose Dunsop Bridge as the location of the 100,000th payphone [remember them?]. The phone box was unveiled by the explorer Sir Ranulph Fiennes on 29 June 1992.’

This all sounds a bit like a publicity stunt and I wonder does any reader know if there is any record of OS making and publishing their calculation – and is there anywhere else making a similar claim?

The pea and ham soup is wonderful, however, so I’m happy to swallow the claim with my lunch.

Incidentally, in a 1941 Geographical Journal article, reprinted in Sheetlines 36,1 Col Sir Charles Arden-Close deemed the centre of England and Wales to be near Castle Bromwich and the centre of England to be near Atherstone.

John Davies

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1 ‘The centres of England and Wales’, Sheetlines 36, 30 available in the Sheetlines archive at https://www.charlesclosesociety.org/SheetlinesArchive
A Bavarian comparison
R C Wheeler

The idea of a national survey on regular sheet lines to something like the one-inch scale is French. In England the French example was emulated, in countries such as the Netherlands it was imposed; in other places the process might be described as ‘fraternal assistance’. I propose to examine one of the countries in this third category, partly because there is a convenient book\(^1\) which prints verbatim a lot of the surviving material, but mainly because it appears to illustrate an alternative path of historical development which the Ordnance Survey might have followed.

Bavaria had suffered between 1795 and 1801 from being a battlefield between France and Austria. The new Elector, Maximilian IV Joseph, threw in his lot with France by a treaty of 24 August 1801 and until 1813 remained France’s most reliable ally among the German states. A Topographical Bureau had been created in 1800 as an instrument of cartographic pillage. Bonne was made its director in January 1801 and in the course of that year its role changed to the production of a map of Bavaria based on the material it had collected. This project appears to have continued under the Army of the Rhine at Strasbourg and resulted in the 1:100,000 Carte de la Bavière, which, insofar as it was completed, was a handsome map, well suited for military use. The Munich version of this same project led in due course to the Bavarian 1:50,000 atlas.

The country needed maps both for military and for civil purposes. The principal civil requirement was for a cadaster that could provide a new basis for the land tax; the laying out of new roads and canals was seen as a further application. To press ahead with these civil applications, a Cadaster Bureau was set up in 1801 alongside the Topographical Bureau. The former would undertake detailed survey, based on points fixed by the latter.

With the immediate needs for military maps and for a cadaster being addressed by others, Bonne could turn his hand to science. A base was laid out near Munich, more than 21 km long, and was laboriously measured. Bonne’s length agrees quite closely with modern figures - though it would be closer still had he not made the mistake of subtracting a temperature correction rather than adding it. Whereas in England Mudge was happy to publish maps quickly and worry about the projection later, Bonne was determined to use a conic projection (his own, naturally) based on a figure of the earth that he himself had measured. Seemingly it would not do to assume that the Bavarian world had the same dimensions as the French one, despite France having the advantage of a much longer arc to measure. Or maybe Bonne as a scientist was unwilling to use a rival’s results. This meant that no maps could be published until triangulation of the arc was complete. In fact, when the measurement of the arc was complete, Bonne seems to have doubted his own result and decided to split the difference.

between his figure and the French one.

The Foreign Ministry, under which the bureau was placed, became restive at the amounts it was paying for no tangible result. (Putting the bureau under the Foreign Ministry was itself an interesting choice, as though the main reason for the bureau’s existence was to keep France sweet.) In 1806, the bureau produced its first publication, a plan of Munich at 1:1666. It is a handsome plan, but a diversion from the bureau’s main objective. One wonders whether it antagonised the private surveyors who might otherwise have produced such a plan, or whether in the uncertainties of war no private individual was prepared to risk such a venture.

The following year, Bonne was eased out and the organisation became the Statistical-Topographic Bureau, acquiring a second section whose task was to produce all manner of statistics about the localities being mapped. One is reminded of Ireland, but the Bavarian account was kept within manageable dimensions. Bare statistics were larded with details that conveyed the character of a place while remaining of military relevance. For example, we learn that Göggingen, though only having 153 houses, possessed a dance hall with its own billiard room.

Eventually, in April 1812, the first two sheets of the planned 126-sheet 1:50,000 Atlas were published. Five years later, the number had risen to nine. Since the Bureau had been formed, Bavaria had become a kingdom and its boundaries had changed three times; it is perhaps fortunate that most of the mapping activities were in the central part of the country, unaffected by these changes.

The decade following Bonne’s departure was not a happy one: the Foreign Ministry tended to cut budgets when it was looking for savings, leading to surveyors being employed but unable to do any fieldwork because the funds for this had been withdrawn; after 1815 the Ministry presumably saw little value in the Survey’s output. Consequently, in 1817 the Survey was transferred to the Army, becoming part of the Quartermaster-General’s staff. The new arrangements worked well. Most of the surveyors were now regimental officers; that meant that in war they went back to their regiments but for almost half a century Bavaria was at peace. The arrangements also meant that the surveyors’ salaries were a charge on the overall army budget. The army saw a survey posting as good training: quite a few cadets were attached for this reason. The main General Staff also involved the Survey in its staff rides, for giving staff officers an understanding of the tactical importance of topography. There are parallels here to the Ordnance Survey, and one is reminded of Mudge’s involvement in the training of cadets. The new Director understood the need for results too.

Several sheets appeared quite quickly; most of the work had been done under the previous administration but they had been left unfinished.

Prior to 1817, the Cadastral Survey had complained about the topographic survey’s output: the fixed points they were provided with were too few and too inaccurate. The former complaint is understandable enough: an organisation producing maps at 1:5000 will always want far more points than a topographic
survey cares to provide. The latter is more puzzling: it might be explained by the fact that the topographic surveyors also undertook plane-tabling and may have used it for lower-order points; however, a letter of June 1819 from Soldner at the Cadastral Bureau seems to imply a more general dissatisfaction. At any rate, the Cadastral Survey had been undertaking its own triangulation and also used its own (Soldner) projection. In 1820 an attempt was made to merge the two nets: the Cadastral Survey was to be responsible for 1st-order triangulation, with lower-order work being done jointly.

This left the military topographic bureau with little more than the task of providing the relief, initially shown with hachures, drawn after the system of Lehmann, in which the amount of black is proportional to the slope of the ground. The bureau also employed the draughtsmen and engravers who produced the 1:50,000 sheets and it dealt with the business of publishing them. That final stage seems to have been more troublesome than in the UK, with argument over the spelling of place names leading to numerous corrections to the plates. Electrotyping was introduced only in 1879 and even then was limited by the hydro-electric power source used.

The engraving and printing of the maps were undertaken with unusual care. The roads are easily distinguished from the finer hachures through printing in dark black, whereas the finer hachures come out as grey or even a greenish-brown. This is not achieved though colour-separation (although this was introduced later) but seems to arise from the manner of engraving combined with the nature of the ink. It would appear that the lines engraved for roads were able to admit the particles of lamp-black or whatever it was that provided the blackness which were duly transferred to the paper, whereas the finer hachures only took in the more liquid parts of the ink. Various types of paper were investigated. That used initially came from the Vosges and was proudly described in 1811 as being the self-same paper used for copper plates by the Imperial (ie Napoleonic) Commission for the Monuments of Egypt. It is certainly true that over the four decades from the 1820s a consistent type of heavy cartridge paper is used throughout.

In terms of their content, though, the maps lack the interest of the OS Old Series. There is little in the way of antiquities, or of industry. Even the railways, when they appear, seem to be plonked down on the face of the map rather than related to the topography they pass through. Apart from woodland, there is a symbol which seems to be used indiscriminately for meadow, rough pasture and heath. The villages tend to be somewhat formless clusters of houses; some of them do not seem to have any meadow or pasture, which seems improbable: perhaps smallish areas of meadow were omitted from the map. It is as though the interest in depicting relief swamped all other considerations. The series seems to cry out for reduction to 1:100,000, and that is indeed what happened, not long

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2 The sheets I have examined are CUL Maps 257.01, a collection started by the War Office before the completion of the series in 1867 and continued by the addition of the final sheets when they were published.
after the completion of the atlas (1867) and German unification (1871), when Bavaria took responsibility for 80 of the 674 sheets of the new 100k Karte des Deutschen Reiches.

The cadastral survey sheets at 1:5000 were drawn on stone as early as 1808 and the massive collection of 26,000 lithographic stones remains in Munich. A 1:25k reduction was drawn, a Positions karte being formed from 4x4 cadastral plans. This appears originally to have been an index sheet for office use. Some were attractively drawn in colour; others were more in the nature of sketches. Originally they were the source from which the detail of the 1:50,000 was drawn, although later on the original cadastral plans were used directly. Once the 1:50,000 atlas had been completed, work started on updating and contouring it. As part of this process, new Positions karten from this date had contours added to them by the Topographic survey. About this time the new 25k sheets started to be made available for sale. From 1901, they became a three-colour product (relief in brown, water in blue) with hill-shading (Schummering). This was part of a project for a 1:25,000 series covering the whole of Germany. The survey insisted on revision and redrawing before it would publish any of these sheets and estimated a total cost of 5.5M marks for 888 sheets; consequently only the southern part of Bavaria was ever published. In the inter-war period part of northern Bavaria was published on the lines of the Prussian Messtischblätte. The centre part was still unpublished in 1945.

As contouring became available, the 1:50,000 was issued likewise in 3-colour form. Indeed it was offered in a variety of forms including a cheap monochrome version printed by offset-litho methods. But as late as 1939 a large part of the country was still uncontoured.

Seen from a UK perspective, it seems odd to put trig and large-scales in one organisation, contouring and small-scales in another. In fact in 1930 the topographic survey organisation was merged into the old cadastral survey which had by then been renamed the Landesvermessungsamt. Seen from a Bavarian perspective it seems remarkable that Colby managed to transform what had been an English topographical survey organisation into what was a sort of cadastral survey of Ireland and then move the Irish operation back to England. Indeed, one can argue that the six-inch scale in Lancashire & Yorkshire was too large for military use and too small for land-management or to support a cadaster. The view (held by the Duke of Wellington, amongst others) that the one-inch should stop at the Preston-Hull line because the six-inch was available further north seems from a Munich viewpoint to be utter madness. Everything the Bavarian surveys ever started was eventually completed, albeit (sometimes) on different sheet-lines.

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3 I Mumford, *Milestones in Lithographed cartography from 1800* (University of Reading thesis) provides useful information about their production.

We discussed blind stamps, and in particular those which incorporated embossed printing dates, on page 104 of our book *The first Ordnance Survey map* and included illustrations of those that we had identified on the page opposite. Two others, used by the Ordnance Survey of Ireland, and on Ordnance Survey hand coloured maps, were illustrated earlier on page 120 of our *One-inch engraved maps*.¹

We have recently encountered a blind stamp design (*above*), not illustrated on either of those pages, that neither of us can recall seeing before. We wonder if anyone else has chapter and verse on the Ordnance Survey blind stamp illustrated here? What does the design signify? Is it coincidence that the centre line of the stamp falls precisely along the junction line of two sheets conjoined, perhaps by the Survey itself? The map in question was a copy of the six-sheet quarter-inch *General Map of Ireland to accompany the report of the Railway Commissioners*, recently found in Dublin. The dimension of the stamp, here enlarged, is similar to the Presentation Copy stamps recorded so often on Old Series one-inch maps.

Roger Hellyer and Richard Oliver

¹ Both books published by Charles Close Society [www.charlesclosesociety.org/bookshop](http://www.charlesclosesociety.org/bookshop)
A surprisingly large number of people choose to visit the summits of Snowdon, Scafell Pike and Ben Nevis in one expedition. Most do this as part of a sponsored fund-raising trip for charity. It is certainly open to question whether such an environmentally unfriendly activity is appropriate for charity fundraising. First, there is the concentration of erosion of paths on such a limited number of routes. For instance, there was one occasion when about 72 minibuses were parked at the top of the single-track road at Wasdale Head. And that, I was told, was just the firemen. Secondly, there must be a huge amount of fossil fuel used hurtling across the country in reaching these peaks. (At least the team raising money for railway charities contract a special train for the job – including a trip on the narrow gauge Ravenglass and Eskdale line.) Thirdly there is much disruption of but little contribution to the local economies. As piggy-in-the-middle, the Lake District is worst off, with frequent disturbance in the small hours of the morning. So do we have any comment on Ordnance Survey pandering to this activity by producing a special map?

But what of the map itself? This is a single-sided sheet branded as an Explorer with three alternative covers (above); you can choose which peak you want on the front. The busy back cover of the Ben Nevis version is shown opposite.

Inside, the sheet is divided roughly into quarters with the 1:25,000 map for each peak being given on three of them. Each of these has an inset giving the simple outline of the whole of Great Britain and the location of the peak (just in case the participants might not know their whereabouts – the similar map on the back cover presumably being inadequate). There is a second inset giving a magnified enlargement of the summit area. The fourth quarter of the sheet has a route planner
road map (extract below) from North Wales to the West Highlands and, for each of the three areas, a local road map. This sheet therefore has on it maps at five different scales. And not a scale bar in sight. There are numerous errors on the sheet; too many for this brief review, but I do have the data to support the statement that this is a slip-shod compilation.

The Explorer extracts have numbered grid lines on them and so that, and text, confirms that they are at the 1:25,000 scale. The local road maps have unnumbered grid lines on them but it does enable confirmation that these maps are at the 1:250,000 scale. The scale of the other maps remains a mystery.

The summit enlargements are just photo-enlargements of the 1:25,000 copy. The short lived Mountainmaster sheet of Ben Nevis had a summit enlargement at the 1:10,000 scale, which better showed the treacherous cliffs and also gave the bearings used to escape this hazard, but this has not been reused on this sheet. These enlargements additionally give the six-figure grid reference for each summit. In these days of widely held and used GPS equipment, might we not have expected ten-figure grid references for these significant locations?

On the Explorer extracts the normal routes to the summits are marked with a bold pecked line. Admirably clear and, in these wild terrains, not obscuring other detail. Where alternative routes are available, then a different colour is used for each route. Otherwise the standard Explorer symbols are used and the standard Explorer legend has been reproduced (but none for the maps at the other scales). Although the map is described as Custom Made, no attempt has been made to prune the legend of the symbols that are not present on these limited extracts.

The route planner map provides no indication of the national parks but highlights some other areas in pale green. There is no legend to explain what these might be. The largest is an area surrounded by the A66, the A68, the A69 and the M6 covering Teesdale, Weardale and Allendale. There are similar colourings for upper Nidderdale and the Trough of Bowland so I think that these are probably Areas of Outstanding Natural Beauty. However, in Scotland, there is a similar green tint surrounding but close to the shores of Loch Lomond. Was this an AONB before the creation of the national park and, if so, has this now been superseded?

Peter Haigh
The Society’s recent activities have included a ‘cartographic meander’ around the City of London and visits to see the map collections at the Mitchell Library, Glasgow and the National Library of Scotland, Edinburgh.

John King led the City of London walk, pointing out many features of cartographic interest to be found along the way. John’s previous London meander was described in Sheetlines 109 and this latest walk will be similarly described in a future edition.

Three of the items encountered were (left from top) the Ordnance Survey map board opposite St Paul’s Cathedral, the Jubilee Walkway panoramic display in Southwark and the slate map of the Thames under Blackfriars Bridge (seen here with John King).

At Glasgow, archivist Dr Irene O’Brien arranged a display of maps and plans which illustrated the development of Glasgow and the surrounding area over time. The earliest maps showed Glasgow as a small town on the north bank of the Clyde and facing it on the other side of the river the village of Gorbals. Subsequent plans showed the development of the city and most notably, the westward spread with its familiar grid pattern of streets.

CCS member John Moore gave an account of the development of the River Clyde from shallow stream to its glory days as a major navigable waterway.
Above: John Moore (second from left) with Clyde charts.

At National Library of Scotland, map librarian Chris Fleet (right) spoke about the digitisation of their map collection to create an invaluable online map resource and, in passing, thanked CCS for linking to and promoting it.

The Library holds the extensive Bartholomew archive, which includes, as well as maps and papers, historic tools of the cartographers’ trade, such as copper and steel plates, lithographic stone and engraving tools, such as these gravers (lower right).

CCS member Paul Bishop gave a talk about his researches into the depiction of limekilns on Ordnance Survey maps.

[photos: John Davies]
The GB 1900 project

Michael Spencer

When they landed, Lewis Carroll’s Bellman said:

Just the place for a Snark! . . .
Just the place for a Snark! . . .
Just the place for a Snark! I have now said it thrice:
What I tell you three times is true.

At the 6 October meeting of the Society in the Map Library of the National Library of Scotland, I first became aware of the GB 1900 project, which aims to collect all the place names on the six-inch map of around 1900, of which there are estimated to be more than three million. The Map Library is a partner in this effort. This enormous collection of historical data is intended to be of use to historians, topologists and genealogists, and will be made available on the Internet as a gazetteer available to everyone. Given the brief overview that was all our time in the Map Library allowed, I hoped to be able to use it in my research into mountain names throughout Great Britain.

When I got home I excitedly called up the ‘overall progress dot map’ on the Library’s website,¹ and got an immediate shock. The names are treated as entities in their own right, without any clear link to their referents. This seems to me greatly to diminish the value of the collection, because it obscures the reason why names are invented in the first instance: to provide an unambiguous reference to a place, so that anyone can go to the same place at any time, describe it, discuss it with someone else, remember where it was, find it again.

¹ nls/maps/gb1900
Let me give an entirely random example: the hill-farm in Radnorshire called Upper Gilwern. You can find this easily enough: the grid reference is SO 086582. The map extract (opposite) shows the dot map for this site, with two purple dots, one at the farm itself and one just below the “U” at the start of the name. Purple dots indicate name sites that have been copied correctly by at least two people (not even meeting the Bellman’s criterion for truth), and clicking on them brings up a data box with the relevant data, including the confirmed name, the six-digit grid reference and the geographical co-ordinates to five decimal places of a degree, which at this latitude is about two feet.

The data box for the westerly dot, which I have labelled “A,” shows the confirmed name as “Upper Gilwern”, indicating that at least two people have read it correctly. The co-ordinates of position, however, out in a field somewhere, refer to no specific feature. They might have been the place where some demented sheep, half-crazed by arthritis brought on by being left out in the rain all its life, had lain down to die. But in fact, they are just the place where the name starts on the map, which is a function of the scale, the size of the font used, and the draughtsman’s choice of where to display the name to best advantage. On a different map the name might easily be shown at a different place; its co-ordinates would then be different. Would this make it a different name?

The data box for the dot “B” close to the farm buildings shows no name at all. The fact that the name at “A” actually refers to the farm (which is quite clear from the map) is completely obscured. This seems simply perverse. One would have expected some kind of link, even if only a reference to “A.”

Just a few yards to the east of the nameless farm is a third purple dot, which I have labelled “C” on the map extract. This is close to the letters “F.P.” on the map, which is of course the conventional abbreviation for “Footpath,” and its data box shows “F.P.” as the confirmed name. This is not a place-name at all, in the sense that it might refer unambiguously to this particular footpath and distinguish it from all other footpaths in the vicinity; it is simply an abbreviation for a category-name, which reappears undifferentiated probably thousands of times on the map. It should have no position in a gazetteer of place-names.

Overall, I feel that the methodology of this project is misconceived. Most of its Snarks are Boojums, you see.
Gordon’s Edinodunensis

One of the most spectacular early cartographic representations of Edinburgh is James Gordon’s *Edinodunensis Tabulam* of 1647, which combines a plan view of the town and perspective representations of the buildings and vennels/closes (laneways). This approach was aided by representation of streets as wider than they actually were/are. Chris Fleet, who hosted the CCS visit to the NLS, and Daniel MacCannell reported in their *Edinburgh Mapping the City*¹ that James Gordon was paid 500 merks (the then-equivalent of £27-15s-7d) for the map, the equivalent of £57,000 today! The map’s enduring popularity clearly dates from its earliest days.

A feature of the map is the representation of the individual plots that fronted the High Street (the Royal Mile), tightly packed with buildings in the western half of the town and with gardens on the ‘backlands’ further east. The map is thus a gold mine for those seeking to understand the history of one of Britain’s most important cities. A 2016 paper in *Urban History* by Geoffrey Stell and Robin Tait, on ‘Framework and form: burgage plots, street lines and domestic architecture in early urban Scotland’², noted that these plots remain the framework for the structure of Edinburgh’s Old Town. And in the other direction (backwards in time from the date of the map): the laying out of the High Street began in the mid-twelfth century and was essentially completed by 1400. This laying out followed a thirteenth century law that states:

“the provost in the presence of and in consultation with the community of the burgh shall choose liners (lineatores), at least four wise and discrete men, such that no complaint is made to the King’s Chamberlain for dereliction of lining . . . The said liners shall ensure that they faithfully line in length and breadth, both foreland and backland, according to the original lawful divisions within the burgh.”³ OS mereing springs to mind.

Stell and Tait continue:

“One later document describes the duties of the liners ‘who define the boundaries of the tofts (plots) and ensure there is no encroachment’ while another records the ‘strobing’ (staking) of a plot 3 rods in length and 24 feet (7.32 metres) in width. On and after burgh foundation, the Scottish burgess liners remained competent to undertake the continuing process of setting.”⁴

The plot widths (and depths) thus delineated followed an orderly structure. Stell and Tait used large-scale OS maps to confirm that this structure persists and to show that plot widths, as documented from medieval records, can still be obtained from these maps.

Paul Bishop

³ Stell and Tait, op. cit., 4.
⁴ Ibid.
“Maps transform us. They make birds of us all. They reveal the patterns of our existence and unlock our cages. If it wasn’t for that map, a second-hand Ordnance Survey given as a Christmas present, maybe none of this would have happened.”


**Everyman’s right in brief**

You may
- walk, ski or cycle freely, except in other people’s yards and other land areas under specific use (such as fields and other cultivated areas)
- stay or set up camp temporarily in areas accessible under everyman’s right (at a reasonable distance from homes)
- pick wild berries, mushrooms and flowers
- go angling and ice fishing
- use bodies of water for passage and other activities; this also applies to ice-covered water areas in winter

You may not
- cause disturbance or damage to other people or the environment
- disturb game animals or birds during the breeding season
- cut down or damage standing trees
- collect moss, lichen, soil materials or fallen trees
- violate the privacy of people’s homes
- drop or leave litter
- drive motor vehicles off road without the landowner’s permission
- fish or hunt without the relevant permits

Those disappointed by the OS Greenspace initiative (see page 35) may be rather envious of the simplicity and comprehensiveness of Finland’s Everyman’s Right, summarised in this page from the booklet of the same name published by the Finnish Ministry of the Environment at www.ym.fi/publications. The right entitles anyone living or staying in Finland, to enjoy freedom of access without the need for a permit, permission or payment.

**John King writes:** This was a purchase in a charity bookshop in Tunbridge Wells for just 50p. Inside is a folded paper map in almost mint condition, code 4000/32. Nothing unusual about the map but I have never seen the envelope it comes in before. The envelope is fairly worn and partially torn. Does anyone know why it was produced in this form? A possible military issue?
**Kerry musings**

**David Archer**

In response to Richard Oliver’s closely argued advocacy of maps folded small and packed to the gunnels,¹ I would like to promote flat sheets with lovely wide margins, or if folded maps, retaining good margins. As will become clear, I am all in favour of white space, the more the better, whether it be round the edges of maps or as the background to the London Transport roundel. Few things in life are more enjoyable than opening a ream of pure white, crisp, A4 paper. There is not enough soothing white space these days, the total opposite being those dreadful American websites that have a black background which make you bristle and click away from them as soon as they appear. Usually black with gold writing. The pits.

Some of the finest wide white borders are found on Ordnance Survey late nineteenth century maps of Africa produced for the Geographical Section General Staff. Whoever designed them set out to produce not only the cartographic item intended, but additionally, something that would stand on its own as a piece of art, with the wide borders forming an integral frame, allowing the eye to see the printed map well away from any surrounding distraction; a pleasure to behold. Not for these designers were things to be a whisker from the sheet edge, where they could so easily be damaged by a slight chip or scuff; no, the map was protected by the margin, and sometimes aesthetically enhanced by dated blind stamps top centre.

The Old Series full sheets established deep margins, which were continued with the quarter sheets, where wide margins were necessary to accommodate the use of copper plates for printing, as Richard notes. Thus, we have a map, surrounded by its border, marginalia, the impression of the plate edge, and then lovely white space before the sheet edge. How different things would have been if there were only 5mm of white paper before the sheet edge. Trimmed within 5mm of its life and no room for a blind stamp. Yes, it was fortuitous that wide borders existed when the idea of blind stamps was hit upon, not to mention when extrusions were needed, or when a member of the library staff stood over a map, wielding an inked possession stamp looking for a place to plonk it (plonk: Library Association technical term for the placing of a possession stamp).

Without a good acreage of paper beyond the neat line, owners are unable to write in the margins, and those slanting next town names sticking out beyond the map would not tell us that Welshpool was 3 miles north of the sheet under inspection. I am sure that everyone reading this has seen notes written in the margin of a map: birds, flowers and butterflies seen, lunches eaten, poetry composed. Being able to see how previous owners lived would cease if margins vanished in the cause of weight reduction. Not that I agree with writing within a map margin, and even less can I abide a margin that shows signs of the map having been folded. A pristine white margin if folded is like a series of footprints

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¹ ‘Is there and optimum size for topographic maps?’ *Sheetlines* 109, 42.
in virgin snow. Sullied. Yes, I know that an impression from a printing plate has a similar effect, but they are meant to be there and are as old as the map, not the result of a quick fold last week or whenever.

A map designer stints the use of white space at their peril.

Consider the two extracts on page 49 of Richard’s article. That on the right is far more luxurious, by using more white space than the extract on the left, which has a mean narrow space between the frame and neat line. The writing even has to break the frame, the space is so limited. Elsewhere on this sheet, county names and boundaries have been treated in an equally tight-fisted way. Inspect any 1:50,000 sheet to see how un-cluttered the border is and how clear and relaxed are the county names and next towns. We have not even reached as far out as the margin and the more generous use of white space can already be seen as good practice, resulting in a far clearer production. I defy anyone to say they find figure 1 easier to read and more attractive than figure 2.

I would hope that any course on map design considers the whole sheet, rather than solely what goes on within the neat line. To me, a map is not only something that portrays a landscape in the most accurate and easily understood way, it should also have aesthetic merit, something that Richard ignores in his pursuit of the functional. Sir Charles Close obviously felt that folded maps should be aesthetically pleasing or we would not have had Arthur Palmer and Ellis Martin working on cover design, marketing and publicity. Maps need a correct and pleasingly balanced white space between the various elements of map, legend and anything else on the sheet, otherwise the whole thing appears cramped and squeezed. These elements, if well-proportioned and set out in a satisfying way, can also be economical with paper usage.

I am unable to take seriously the proposal that paper size should be reduced in order to lessen the weight of a map. The only maps that I recall as being ‘heavy’, however defined, were some very large dissected maps with a thick gauge hessian backing and strong quarter-inch thick card covers. All right, I know that when preparing to walk to the South Pole, explorers remove the paper wrappings from a couple of hundred Mars Bars to achieve a minimum weight to be hauled, but a Sunday afternoon walk with an Explorer is not in this league. When did you last need to carry several maps in one pocket? The supposedly ‘unnecessary extravagance’ of white space on five Explorers or Landrangers carried on a long-distance walking holiday could be more than offset by not taking a second spare woolly hat.

I do not have my tape measure to hand, but would bet on some of the small duvet-sized double-sided Outdoor Leisure maps, being amongst those that offer ‘better value for money’: a statement with which I have always disagreed. True, they do give more mapped area per pound sterling, but are poor value for money, as Richard eventually illustrates since large maps do not function well in all situations. Forget the quality, look at the quantity? I disagree. OK, wide margins might mean a map will cost more, but most people I know are willing to pay a bit more for quality, rather than skimping. Indeed, from experience I have found that given the choice between a map with side margins cropped but
heavily reduced in price, and the same map un-cropped at full price, the latter sells every time. People are willing to pay for white space. If you want cheaper maps, keep the attractive white space on maps but have plain white covers bearing just a series and sheet number. No attractive covers on Ordnance Survey maps? Most unwelcome.

When primitive societies rise above a certain level, they start to experiment with decoration, something not needed for survival. The same holds for maps, where we do not need a minimalist product. Many of us were attracted to OS maps by their sheer beauty, and purely functional objects are seldom beautiful. Consider the double-sided Ringwood, Wimborne and Ferndown Neighbourhood map, Map cover art image 170, an accumulation of eight un-captioned map extracts, lacking any hint of the word design, and probably the outcome of a problem-solving exercise: cram these map extracts onto this sheet of paper. Open it out, turn it over, and the maps are upside down. Design? What design? In map making, there are depths which should not be plumbed. By contrast the Cambridge City Map, edition A, 1979 has nice wide top and lower margins and is a joy to behold, even though there is no sheet title, which I do like on a map. Alas, the later editions have a reduced border in order to accommodate a shorter integral cover of the desired length and are cramped by comparison. Again, the Ordnance Survey Bi-Centenary set of the Seventh Series are a joy to look at. New, crisp, paper flat sheets with full margins. They glow. How different they would look if the margins had been trimmed. Not the same beast at all.

Many of us never consider the design of most things we buy; we just use them. And if there are minor inconveniences, we grumble a little and accept them. This applies to maps as well. I am sure that most members feel as frustrated as Richard that an Explorer does not sit easily in a pocket, or that the bit of the legend you want can never be found, but few have gone to the length of sitting down and producing a new specification as Richard has. A specification he would prefer. I would prefer a more attractive specification with creative white space. Perhaps the answer is to extend the possibilities of the ‘Custom Map’, and allow more features such as legends and margins to be manipulated or even eliminated?

Many aspects of life are being minimised, and not necessarily for the general good. I see a ‘fragments’ society developing, where pupils have only studied a chapter of a novel or one act of a play, where brief tweets are the preferred channel of communication, rather than considered argued statements. Space is needed to appreciate an object. A visit to an antiques hypermarket with stuff piled high and densely packed, is so different from a museum visit where a case might contain a single object. Which is easier to study? Space and white space provide the answer.

Surely the diagram at the end of Richard’s article is a strong argument for the generous use of white space, if only because it is so inadequate. Why? Because it is almost impossible to read. Why? Because it is too small. OK, I know that the Editor of Sheetlines walks a tight rope, and using a full page for such a minimalist diagram might seem extravagant, but in this case I do wish plenty of white space could have been found.
Whist I agree with Richard Oliver that some folded maps are too large for the average pocket, I feel his suggestion that maps be pared down to the bare minimum is over the top, because it is exceedingly difficult to be both minimalist and attractive. The modern Ordnance Survey is not up to this challenge. An OS map should at least be attractive, which they are, even if the beauty of olden days has long vanished. I am indifferent to the folded size of a map as I never carry one in a pocket, but I do object most strongly to the sheet size of the large double-sided Outdoor Leisure maps, which are impossible to use, even in a friendly environment. Of course, if we insist on having more mapped area for our money, we could try having maps of a smaller scale, which will not go down too well with the eyesight of an ageing population.

The Cambridge map referred to by David Archer, reduced to fit the page. The actual size of this extract is about 9 inches wide by about 4 inches high. The ‘white space’ top margin is over 1½ inches deep.

**Rowley Award 2018**

Have you ever thought “I could write something like that” after reading an article in *Sheetlines*? If you have, then your article and the piece that inspired you might well be in line for the £50 prize given as the Rowley Award.

The Rowley Award is not for the best article, nor for the most scholarly, but for an article which the judges believe will inspire others to write for *Sheetlines*. It acknowledges those who have set an example for others to follow.

*Sheetlines* is a depository, not only for scholarly research, but also for more everyday Ordnance Survey observations and discoveries.

So, start thinking, and hopefully writing for the April issue, and if you miss that, then what you write will be considered for the next prize. The only condition is that you have not had more than one piece published previously, apart from snippets and letters.
We’ve got it covered!

This is a small selection of the more than one thousand map cover images, all with descriptive captions, in the online archive under construction at www.charlesclosesociety.org/coversintro
TfL has recently issued three *Legible London* paper walking maps of Old Street, Brixton, and North Bank (Charing Cross/Embankment/Temple). They have been issued to mark the tenth anniversary of the introduction of the *Legible London* wayfinding system. The maps are normally displayed on street pillars of which there are now over 1700 in London. These paper maps are designed in the same style as the pillar maps and produced by TfL in partnership with the illustrator Matt Blease and business partnerships in the three locales.

The maps cover six panes folding out to A3 size. Each coloured map shows key buildings in yellow with some drawn in perspective. No scale is included apart from a 400m/5 minutes walking distance but each map has a different scale. North Bank is the largest with a scale of approximately 1:3636 followed by Brixton at 1:4123 and Old Street at 1:4545. North Bank and Old Street are landscape and Brixton is portrait shaped. A north point is included together with a simple key and Crown copyright and database right 2017 Ordnance Survey statement.

The North Bank map is to a larger scale than the current TfL/LU *Continuing Your Journey* A5 folded map available from Underground stations. The *Legible London* mapping is used for the CYJ maps but differs from these three new maps in that it has a grid, more detailed key, a street finder index and a route (bus) finder.

*John King*

I cannot forecast to you the action of Russia. It is a riddle wrapped in a mystery inside an enigma.² So said Churchill. Soviet mapping is nothing if not enigmatic. It makes the familiar seem exotic. Seeing a map of the countryside around ХАРЛОУ we start to imagine Cossack cavalry and soldiers with snow on their boots – only to realise that we are looking at Harlow. But equally, the maps make the exotic familiar. The Soviet Union imposed consistent standards throughout the world, so on facing pages in The Red Atlas we may contrast the straight lines of New York and the seemingly random curves of Newcastle upon Tyne without being distracted by differences between US and British cartographic style.

All was mysterious until the fall of the Soviet Union. A lot is still unknown but this book provides a much-needed resource by drawing together into a single volume everything that has now been discovered about the world-wide Soviet maps produced during the Cold War period, estimated to be in excess of one million separate sheets. The main text starts with a brief history of Russian cartography before detailing the various series, scales and specifications of twentieth century Soviet mapping. The authors then consider how the raw data was collected, particularly in Britain and the United States. Topographic maps could rely largely on published information, but the ‘city plans’ of places as small as Gainsborough would have needed ‘boots on the ground’.³

Secrecy was everything, the few maps of Soviet home territory permitted for civilian administrative use or tourism were generalised or deliberately falsified. But complete secrecy throughout the vast Soviet empire was problematic. The authors quote a former Red Army officer that even maps damaged on exercise had to be signed back in after use, and yet some fragments apparently filtered out from a training area after having been used as toilet paper.³ Nonetheless, very little was known about Soviet maps until they began to reach the West after the collapse of the USSR. In the final chapter of The Red Atlas this story reads like a thriller, with descriptions of $250,000 in cash being handed over at a helipad in Estonia and tons of secret maps in Latvia being sold as scrap paper instead of being destroyed.

The meticulous academic detail included in the earlier part of the book may of necessity not sit entirely comfortably with this closing chapter but, together with the copious map extracts, each makes a vital contribution to this important new work.

Davies and Kent have been well served by their publishers: the main body of the text is plentifully illustrated and it is followed by a fascinating 58-page ‘appendix’ of mainly full-page extracts of Soviet mapping. Despite use of colour throughout, the cover price is very reasonable for a specialist work. The illustrations set a new standard of sharpness and clarity; all the detail is clearly visible – even the semi-matt paper has obviously been carefully chosen. Soviet mapping is utilitarian rather than glossy.

Map addicts are used to Christmas presents with titles like Old and Decorative Maps and to the disappointment of opening them to find page after page of fuzzy reproductions with poor colour registration. This year let it be known amongst your nearest and dearest that a copy of The Red Atlas would be far more welcome.

Chris Higley

¹ See https://redatlasbook.com/ for details of a discounted price.
² Winston Churchill, broadcast talk, 1 October 1939.
³ Ian Mumford, Sheetlines 71, 65.
For our prize quiz you are invited to identify the twenty railway termini depicted, in alphabetic order, on these *Landranger* kilometre-square extracts. The prize of a copy of *The nine lives of John Ogilby* (reviewed in *Sheetlines* 108) will be awarded to the correct answer selected at random on 30 January. All other correct entries received by that date will earn an honourable mention in April *Sheetlines*. 
**More Christmas teasers**

Four more puzzles, just for fun. No prizes this time, but you are welcome to send your answers to the Editor – or simply hold on to them and compare them with ours, which will appear in April *Sheetlines*.

**Peter Haigh** poses the first: The National Grid system provides a unique reference to places within Great Britain. Two letters plus six figures provide a location accurate to 100 meters. If both letters are omitted, then the same reference will be duplicated every 100 km.

If just the first letter is omitted, then the reference will be duplicated every 500 km. This first letter is necessary to, essentially, distinguish between the duplicate references in England and Scotland.

However, if the Northern Isles are brought into consideration, it is possible that triplication may occur. Do any instances exist where H, N and S, each followed by the same seven-character reference, will give a dry land location for the three points, 500 and 1000 km apart? And if so, where?

**John King** asks you to read the description below and from the information given draw a map of the centre of the town:

The centre of the small market town of Eldon lies just north of the River Wyke. Visitors coming from the south by road would cross the river over the old stone bridge which marks the centre of Lower Market Street. They would pass St. John's Church on their left hard by the river, before arriving at the crossroads where stands the Market Cross.

Visitors coming by bus would alight at the small bus station behind the Royal Oak, which stands on the south and east side of the junction of Cob Street and Upper Market Street which leads down to the Cross.

At the Cross, where Market Street is met by St. John's Lane and Wyke Road, stand four of the main buildings of the town. Between the Church and the churchyard and St. John's Lane is the impressive Victorian Building which now houses the Nat West and Lloyds Banks, the latter occupying the tallest part, which commands the corner of two streets.

On the opposite corner, with entrances from Upper Market Street and St. John's Lane, is the Town Hall, also Victorian. Wyke Road leads east from the Cross and its junction with Upper Market Street is marked on the north side by the George Hotel which is genuine Georgian, and on the south side by an equally old Market Exchange. The southern face of this building fronts onto the open Market area, which runs down to the river, and faces across Lower Market Street to the eastern aspect of the Church.

*And finally, what is the symbol (right) seen on OS Road maps and what is the green line running through Wyddial on Explorer 194, edition A.*