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“25-inch Revision”

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The Society publishes a wide range of books and booklets on historic OS map series and its journal, *Sheetlines*, is recognised internationally for its specialist articles on Ordnance Survey-related topics.

25-inch Revision

Rob Wheeler

With the completion of the Replot programme in 1896, the whole of Great Britain (other than mountain and moorland) had been mapped at 25 inches-to-the-mile. It had taken a little over fifty years if one includes the six-inch work that was replotted, and it cost something in the region of £3 million.¹ The resulting topographical database (to use a modern term) was a major capital asset that would henceforth be maintained by cyclic revision.

Winterbotham² describes the method used for revision as the ‘graphic style’. It depended heavily on using existing detail and the straight lines joining such features to fix new work, although revisers did carry a tape and a chain for use when necessary. It is worth quoting Winterbotham’s exact words:

Bearings come from “straights”, “prolongations”, and “shots” in directions established by former work. The astonishment and frequent unbelief on the part of all those who have not seen it done is readily understandable. The soundness of the method does in fact rest on five factors:-

(a) There must be enough detail of houses, trees, fences and the like to allow of such alignment.

(b) The work to be revised must be of the highest standard, or else doubt and delay lead inevitably to mistakes.

(c) The amount of new detail to add must not be more than can be hung on previously surveyed, and still visible, objects.

(d) The revision must itself be checked and “finally revised” by a second man.

(e) Revision must be carried out on good originals or traces which do not introduce any distortion into the original survey, or the previous edition.

‘Prolongation’ means in effect extrapolation. A point fixed by such means will inevitably be less accurate than the existing detail. Note also the use of isolated trees to define a line. The plotting of isolated trees always seems to have been less exact than the junctions of fences which the Survey regarded as the ideal. But even here it is worth remembering that what appears on a map or on an air photo as a junction of fences may be seen on the ground merely as the corner of a field. Ramblers will be aware just how vague such a corner can look from a hundred yards away. Thus, the revised work would inevitably be less accurate; yet the method depended on existing detail being ‘of the highest standard’. For how many cycles of revision would this method be viable?

It is not the purpose of this paper to chart the decline of accuracy and the way that revisers somehow managed to keep it going for fifty years - and longer in rural areas.³ However, for successive Directors-General it was the skeleton in the cupboard; and the need to limit, so far as possible, the progressive deterioration in accuracy lay behind many of the procedures followed in revision.

¹ Estimated on the basis of figures in R Oliver, *The Ordnance Survey in the Nineteenth Century*, 2014, Appendix 1.

² Brig H StJ L Winterbotham, *The National Plans*, (OS Professional Papers NS16, 1934) 26-27.

³ John Cole’s papers in *Sheetlines* on bypassed plans and overhauling are instructive.

Card Revision

On initial survey, field examination (which might incorporate revision to include, for example, new railways) had used a tracing.⁴ The re-plot had also involved revision, and this must have been done on a tracing of the replotted map.

Now, for the First Revision, copies of the existing published plans, printed on stout paper and divided into six portions, each of about a foot square, were issued to the revisers as a basis for the new map. The idea was that two of these ‘cards’ would butt up against one another on the reviser’s board; and thus continuity could be obtained across edges, both within a sheet and across sheet boundaries. The reviser would add new detail in black and would physically delete old detail no longer applicable.

This must have been significantly cheaper than taking tracings. There was however a problem: the first edition of the published map was derived from a tracing of the fair drawing. The second edition was now derived from a tracing of these cards. So the new map was a tracing of a tracing insofar as originally-surveyed detail was concerned.

There is one point not covered in the published accounts: for most first edition sheets, the zinc plate was no longer in existence, so how can copies on especially thick paper have been obtained? Perhaps ordinary (uncoloured) sales copies were mounted on card; or perhaps they were simply used as they were.

Winterbotham observes that the only records left from this process were the corrected cards. There was no MS drawing for the new map - or rather the only drawing was a litho-tracing which could only be used once, for a single transfer to zinc.

Card Revision was also used for the Land Valuation revision of 1911-12. This was limited to buildings and roads; features like railway tracks were not revised. As many staff as possible were switched to this task and standards sometimes fell below those normally expected. The resulting maps were not subject to copyright deposit; indeed, many remained in manuscript.

Introduction of ‘Blues’

Winterbotham: “‘Vandyke’ came in as a process in 1900. The direct impression passed, by vandyking, from the original drawing (not from the published plan) to the zinc plate, cutting out litho tracing, and when printed from that plate served as the original of the reviser’s trace and, in blue, as a direct key for fairdrawing when that was necessary. It did not help correction, of course, for that must be traced, but fair drawing was now so much simpler that the correction of the existing zinc plate ceased to have its original importance.”

Ferroproussiate blue was used because it would not photograph. The draughtsman added everything that was to appear in black ink (except that cadmium orange - which *would* photograph - was used for streams where they might be confused with fences). He might also use cobalt blue for things like parcel numbers on foreshore which the OS wanted for completeness but which were omitted from the published map. These drawings eventually found their way to NLS (in the case of Scotland) and Aberystwyth (in the case of England & Wales). NLS has recently scanned a selection of their drawings, and this has made this present article possible.

⁴ WA Seymour, *History of the OS*, 1980, 171.

The main question this article addresses is the nature of the original of which we now see an impression in blue. Winterbotham says it is “the original drawing”, which in the case of a first revision would seem to mean the original fair drawing. Since these have (almost) all perished, I had looked forward eagerly to seeing some - if only in blue rather than full colour. In that respect I have been disappointed. So what were the originals? There are four main categories:

- (1) Those derived from a First Edition drawing, with parcel numbers but no names.
- (2) Those derived from the cards used for the first revisions.
- (3) Those derived from a reduced 1:500 survey.
- (4) Those derived from a printed sheet or a master drawing for such a sheet.

This fourth category was always used after 1920. These are the only blues that have names and other lettering. They are straightforward and need no further comment.

Category 1: Blues from First Edition

As already observed, the blues derived from a First Edition drawing have parcel numbers. These are First Edition parcel numbers and were of no use to the revisers. That confirms - if there was any doubt - that these are an integral product of the First Edition. Indeed, Winterbotham is willing to describe them as the original drawing, which seems to imply they are not a tracing of any sort. We have a name for them, from marginal annotations on a couple of sheets: *Parish Impressions*.⁵ The word ‘Parish’ was used quite loosely for anything associated with the 25-inch, but *Impressions* is more surprising. I believe the explanation is that they were ‘pressed copies’ taken from the original drawing prior to stamping with names etc. Pressed copies were quite a common technique used for business letters towards the end of the century.⁶ Copying a full 25-inch sheet will almost certainly have required a roller copier, and maintaining uniform pressure with a roller of that width required careful engineering, but the requirement was exactly the same as that for printing from a copper plate and it is possible that such a printing press was modified for this purpose. The biggest challenge is that the technology normally required that the ink be less than a couple of days old. The interval between drawing the linework and stamping parcel numbers was surely much greater, given that parcel numbers could not usually be assigned until all the sheets of a parish had been drawn. One possible answer is that the copying may have been done prior to defining parcels, with parcel numbers and braces being stamped on the Parish Impression and subsequently on the fair drawing. Since we have no surviving fair drawings, we cannot check on this point.

This of course poses the question of why these impressions should have parcel numbers on them anyway. I suggest they were for use by the area computation branch in computing areas. Doing this in parallel with the stamping of names would reduce delays in the publication of sheets. Incidentally, it was less demanding to produce a copy in mirror-image: for area-computation this would not matter in the slightest.

When did this practice start? The earliest Parish Impression I have noted used as a blue was of 1867. That is largely because the earliest First Edition sheets were first in line for revision so were revised before 1900. But if this form of copying had been in use as early as

⁵ Nairn 6.4, 7.1; Inverness (Mainland) 1.14.

⁶ See https://www.officemuseum.com/copy_machines.htm for a US review.

the 1850s, one might expect more to have been heard of it.



Figure 1: Nairn 4.3 : Trees reproducing partially on the blue, compared to the published first edition.

Figure 1 shows some corroborative evidence for the use of pressed copies. On the left we have a couple of isolated trees from the blue for Nairn 4.3. They look odd because the upper-right part of the stamp has not reproduced. Perhaps the manner in which they were stamped left insufficient ink in that portion, which had fully dried by the time the copy was made. The problem is widespread on this sheet. On the right we have the same trees on the published map. That they use a different tree-stamp is unremarkable: remember that the published sheet was produced by litho-tracing from the master-drawing with all the stamping being re-done. It is quite possible that the tree stamps in use for the two purposes were deliberately made different, each having different sorts of user.

If then we are able to view, albeit imperfectly, an incomplete version of the fair drawing, what does it tell us about these fair drawings - at least those of the late 1860s and early 1870s? One feature that emerges is a surprisingly relaxed attitude towards uniformity. Whilst the titles of the published Nairnshire sheets have the parish name top-left and NAIRNSHIRE with the sheet number top-right, the blues lack the parish name and can describe the county as NAIRN, as Co NAIRN, or as NAIRNSHIRE, and it often appears top-*left*. Omitting the parish name is unsurprising, as fair-drawing was done on rectangular sheet lines with restriction to a single parish only coming at the stage of litho-tracing.⁷ Yet even this is not uniform: occasional sheets are found, lying wholly within a single parish, which *do* give the parish name top-left.

The fair drawings will have stopped at the county boundary, but draughtsmen did not always ignore what was happening on the other side. Figure 2 shows an example where a dagger has been used to show where an Elginshire parish boundary meets Nairnshire. The use of a dagger here does not really accord with its use on Parish Parts where parishes within an adjoining county were completely ignored; but the draughtsman seems to have

⁷ Winterbotham states on p36: "the unit of plotting was firstly the parish". But Seymour, 169-171, states that chain survey was based on the tertiary triangles and implies that plotting was done on the same basis. This is confirmed by the blues: when an area needed to be replotted, a whole tertiary triangle was redone - see later when blues from card revision are discussed. And undertaking plan examination on a tiny portion of a parish surrounded by blank space would have been impossible.

considered it as useful information and the dagger was a standard way of indicating it. Being comprehensible was what mattered rather than uniformity.

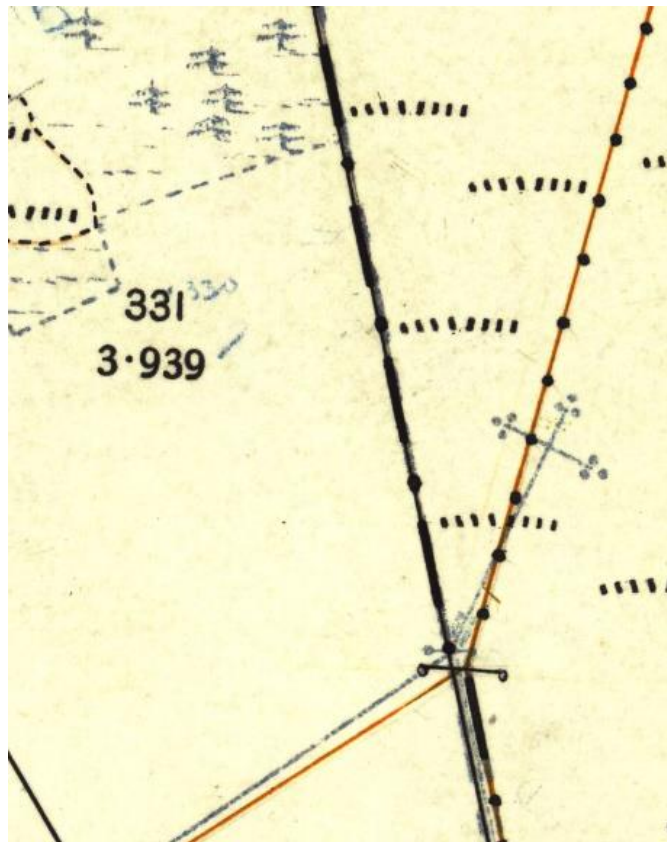


Figure 2: Nairn 5.12 filled with Elginshire. Note the dagger on the Nairn blue where a parish boundary joins. Note that ornament on the blue is limited to Nairn. The line in cadmium orange is a stream.

One variation from the printed maps that can cause confusion is shown in *Figure 3*, where the NW edge of parcel Dornoch 1268 is marked with closely-spaced horizontal lines.

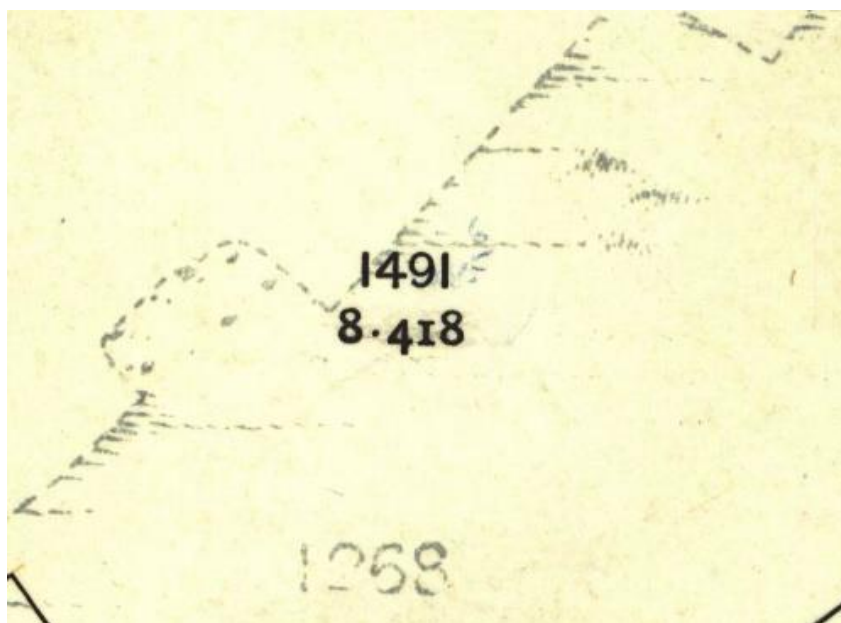


Figure 3: Sutherland 113.6 with rough pasture ornament.

These are somewhat reminiscent of the horizontal blue lines used to indicate waterlogged ground. However, they are merely the manuscript form of the ‘flat-tussock’ type of rough pasture symbol, drawn with strong emphasis on the edge of the rough pasture and exceedingly sparse lines in the interior. Their reproduction on the blue is somewhat variable, so when they are clearly visible they have potential to be misinterpreted.

A certain number of blues derived from completely redrawn Second Edition sheets are similar in character to these Parish Impressions. They usually have diagonal hatching for building fill but other ornament may be lacking. However, isolated trees (especially deciduous ones) do tend to be present. The explanation I would put forward for this is that it was necessary for these to be stamped in their correct places before parcel numbers were stamped, so that the two should not conflict. Sometimes one finds that this priority has not been extended to isolated trees that impinge on fences: this might be explained from a desire by the area computation branch to keep the lines to which they were measuring as clean as possible; and trees like this at the very edge of a parcel were unlikely to clash with a parcel number. It is worth noting that isolated trees in this era tend to be drawn predominantly in parkland or adjacent to country villas; hedgerow trees, if present, tend to form a continuous belt and to be treated as a thin, elongated wood. Hence quite a few sheets do not have any isolated trees at all.

Category 2: Blues from Second Editions

In this case there is no doubt about the source of the blue: Winterbotham tells us that the only records left by the revision were the ‘cards’ as corrected by the reviser. What is in doubt is the process by which the blue was derived.

The OS was seriously concerned about the inaccuracies introduced by card revision and it carried out initial checks in the office. The commonest of these was to see whether features continued smoothly across sheet edges: even though the card concept was intended to address this, frequent discrepancies were found. This leads to marginal notes to the reviser for the new edition to thoroughly test detail in the suspect areas. The cards were also tested to see whether detail that was unchanged was in the same position as in the original fair drawings. When it failed this test - presumably either because the First Edition litho-tracing had slipped, or because of cumulative paper distortion - the blue was traced from the fair drawing, updated by new detail from the cards. In a couple of cases, trigs were found to have been mis-plotted on the fair drawing itself. In such cases, the blue was replotted from the original surveyors’ notebooks, updated where necessary by tracings taken from the cards. Such replotting is often confined to one of the tertiary triangles, which had been the basic unit for chain-survey. It is clear that the Survey were prepared to put significant effort into making the blue as accurate as possible. Indeed, for much of the period, fence junctions and buildings that remained unchanged from the original survey might be annotated in the office by a ‘J’ or ‘OLD’ respectively to indicate to the reviser that they should be more reliable.

By paying careful attention to the marginal notes, one can often deduce that a particular blue is derived from a tracing; but what about the great majority, where the notes at most direct the reviser to test detail in a specific area? Here the crucial evidence is the absence of names and of almost all ornament (rock-drawing and sloping masonry being the exceptions) from the blues. Hachures are normally replaced by broken lines delineating the top and/or

bottom of the slope. This is incompatible with any part being a printing of the published map. It seems to follow that in these cases too the detail has been traced from the cards. That would supply a mechanism for correcting for paper-shrinkage, etc; and certainly the junctions of cards within a sheet seem usually to be handled remarkably smoothly. If the detail has indeed been traced, it seems to have been done with rather more care than had been exercised in the litho-tracing for the Second Edition.

One type of card-derived blue that needs to be watched for is that incorporating Land Valuation (LV) revision. It is liable to affect most urban and semi-urban areas. For any Third Edition sheet surveyed before 1920, the interval since the LV revision is fairly short and the restrictions on most building that were in place during WW1 mean that changes since that revision were small. Thus most of the blue detail from the LV revision will have been overdrawn in black and will not be visible. Often it is the absence from the blue of detail from the Second Edition that alerts one to the presence of LV material. *Figure 4* provides an exception: in 1895 Philpingstone Road had no houses west of the crossroads with The Run, so what one sees on the blue must be from the LV revision, visible here because of a displacement error.

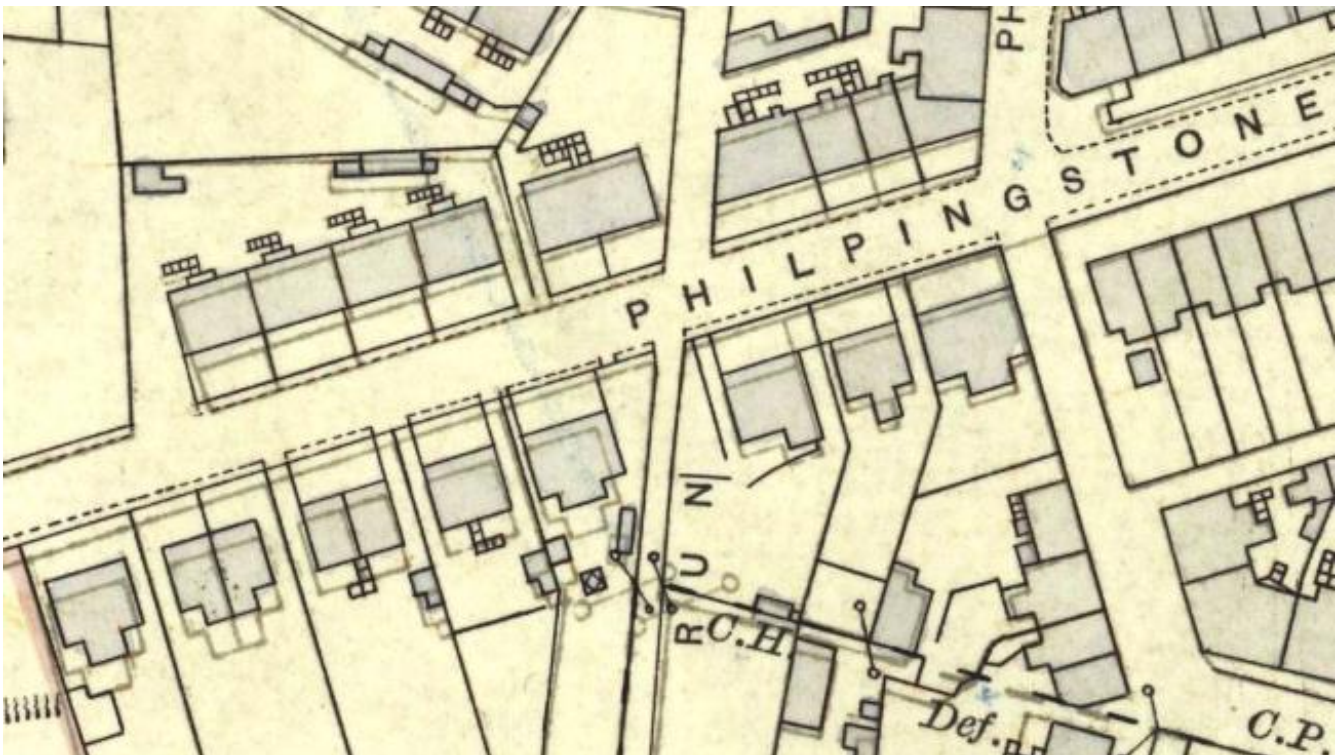


Figure 4: Linlithgow n1.16 showing LV revision.

Category 3: 1:500 photos

Certain towns had new editions of their town scales produced at the same time as 25-inch revision or re-survey was being undertaken in the 1890s. The 1:500 mapping was produced as a first stage and was photographed when the linework only (or very little more) had been drawn. This was presumably so that the detail could be photo-reduced and used to draw the 1:2500.

These photoreductions were available for use as a blue for the next edition. Alternatively, the Parish Impression (or its equivalent) from the 25-inch might be used. It is difficult to perceive any logic in the choice. For example, the 1:500 covering Edinburgh

Waverley station was surveyed before major changes to the station which were incorporated on the 25-inch; yet the blues for this area were derived from the 1:500. Possibly the decision was driven by the dimensional stability of the different alternatives.

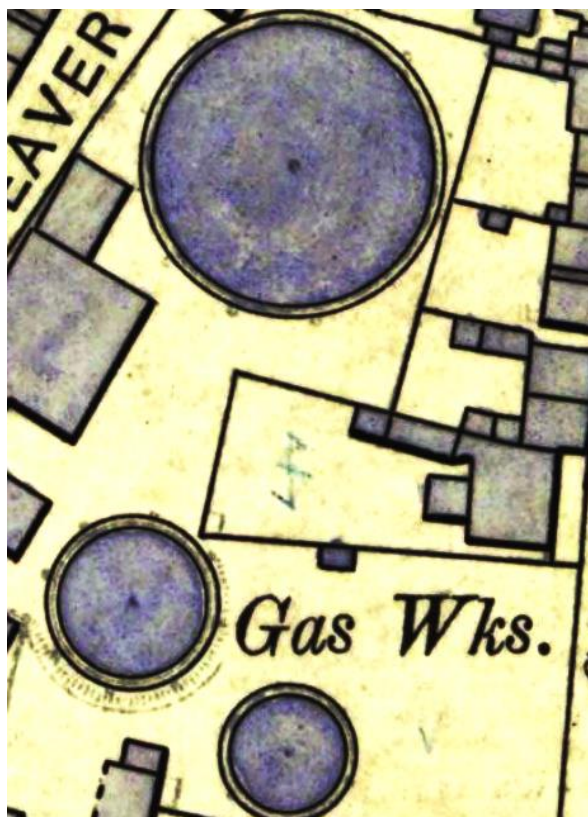


Figure 5: Ayr 33.6 on a blue from the 1:500 survey of 1905. The northern gasometer was not present in 1895. The 1895 25-inch does not show the supporting pillars nor the earthworks around the middle gasometer.

At Ayr (Figure 5) there had been a 1905 1:500 survey, independent of any other revision and not deposited in the copyright libraries. Reduced to 1:2500 it was used directly as a blue. Perhaps because it was on local sheet lines, the area reproduced extended a little beyond the 1:2500 sheet lines. The 1:500 material had not reproduced well and the figure has been enhanced to make the blue clearer

Cross-border fill

Policy on which sheets were to be filled to the neatlines with material from a county on another meridian and which were to have such areas left blank is surprisingly opaque. Perhaps there was confusion within the Survey, because one finds sheets where the blue has been filled to the neatlines but where the drawing stops at the county boundary. Or perhaps this was done because the reviser might need to take bearings from features across the border.

Often two adjacent counties were revised in a single operation, and there was up-to-date material available. In such cases, the blue is scarcely visible, having been entirely overdrawn. Indeed, one might suppose that a portion of the foreign county had been transferred to the plate, were it not that the blue is visible in the gaps of broken lines. One may also observe that the drawing of the 'home' and 'foreign' versions of the same terrain is not absolutely identical.

The material used for these ‘foreign’ blues often has linework only, even when it is derived from a First Edition. One might wonder why, if a linework-only copy was available, it was not used more generally. It is pertinent to note that this linework-only version is only ever used on ‘foreign’ portions, never within the ‘home’ county. I suspect it is actually a tracing from the fair drawing - possibly prepared in connection with the six-inch maps - and was not thought to be accurate enough for use by revisers.

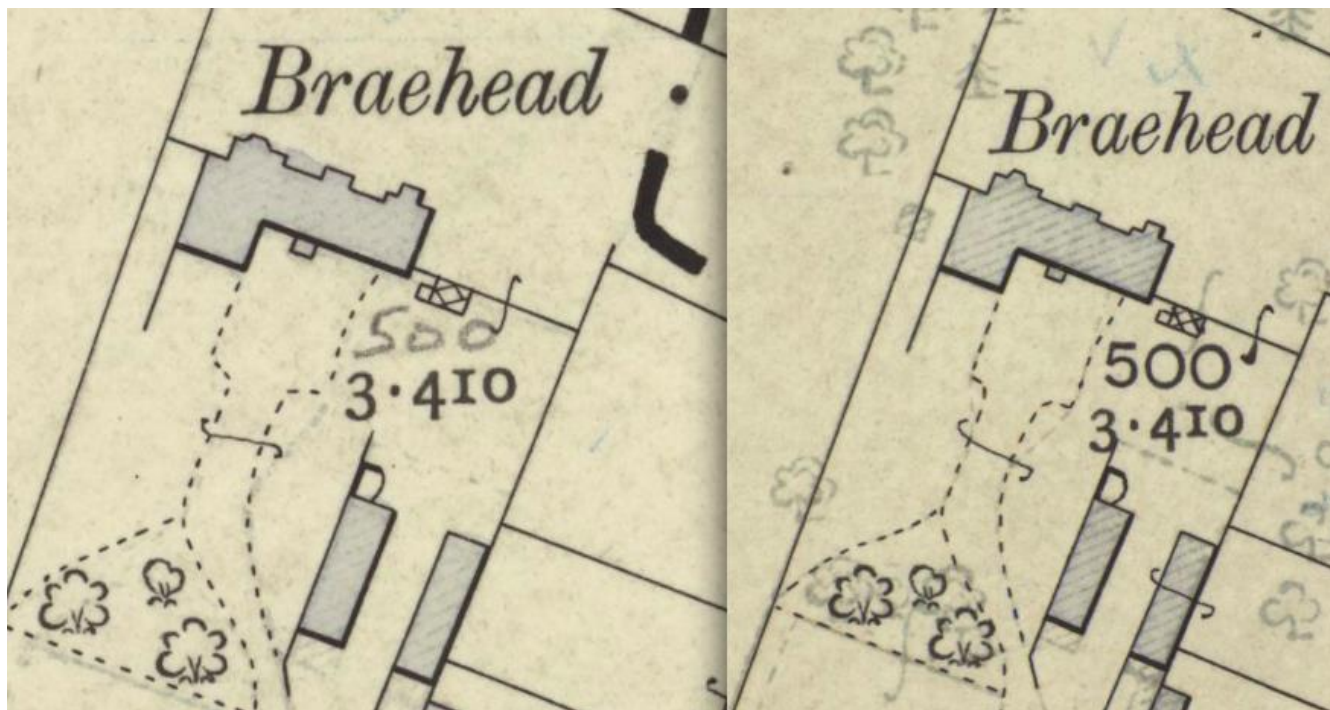


Figure 6: Renfrew 8.12 of 1913 (left); Lanark 5.8 of 1913 (right).

Figure 6 gives an instructive example. ‘Braehead’ was a villa standing in its grounds a little south of the Clyde; it is just in Lanarkshire. It appears on Lanarkshire 5.8 of 1913, and also on Renfrewshire 8.12 of 1913. The former was drawn on material from card revision, complete with all trees. The latter was drawn on one of these linework-only blues. (Ignore the pencilled parcel number: the addition of parcel numbers in this way is something regularly encountered, but these do not form part of the blues proper.) The former includes a small building west of the villa, which had gone by the time of the Second revision. The latter lacks it. Note also the difference in the broken line marking the edge of the driveway where it differs from the 1913 over-drawing. The card-derived version (*right*) agrees tolerably well with the published Second Edition; the version on the left appears to be sloppy tracing. A single example does not establish an absolute rule but on the basis of this and a few other examples, I would warn against placing much reliance on cross-border detail. Differences between sheets of different counties are likely to reflect drawing errors rather than anything real; and those drawing errors are more likely to have occurred on ‘foreign’ work.

This somewhat casual attitude to the quality of cross-boundary drawing might have formed a coherent policy if county boundaries had been stable but fell foul of the numerous changes that took place. Use of linework-only tracings was evidently permissible

in areas that had been foreign but which were now part of the home county.⁸ The consequent deterioration in accuracy may explain why in the 1890s so many of the sheets around Glasgow where counties met were redone. Exactly what this meant in survey terms is not known, but the blues that resulted are akin to those from a First Edition sheet rather than from card revision. Life was no easier for the OS when they left foreign areas blank; this policy could result in odd sheets like Renfrew 12.12 of 1947, which consists of a small portion of Renfrewshire; a larger area that used to be Renfrewshire and had been transferred to Lanarkshire, but too late to be included on Lanark 10A.8 of 1936; and an even larger blank area, again now Lanarkshire, which *had* been shown on Lanark 10.8. Before the days of the NLS Sheetfinder, how on earth did anyone who wanted that second area discover that they needed to look on a Renfrewshire sheet?

Utility of the Blues

What use are the blues to a modern user? What can he or she learn from them about past topography that is not available from other sources? There would seem to be three benefits: greater accuracy, extra detail, and (occasionally) unpublished material.

‘Accuracy’ means different things to different people. The OS’s prime concern was that features should appear on the map in their correct position. In contrast the modern user who is (say) tracing the history of a house will not notice a displacement of a few metres, as long as nearby detail is similarly displaced. What such a user *will* notice is changes to the dimensions of a building, particularly changes to the dimensions of small projections. Perhaps the point at issue is whether the projection shown is the same as a surviving piece of structure. Or perhaps the dimensions help to identify the purpose of a vanished structure. For example, an outside lavatory is likely to be about 1 metre \times 2 metres; if a projection is 1 metre square or 2 metres square, then it probably had some other function.

Published maps up to 1900 were produced by litho-tracing; and tracing was liable to introduce distortions in individual buildings. Much depended on the way the tracer worked. If he traced a small projection as a single operation, he may well have ensured that he retained its proper proportions; but if different sides were done as part of different operations, the errors can be independent and this can lead to dimensional changes of at least half a metre. Tracers might also completely omit a small building, or they might omit internal divisions.⁹ Blues from the Parish Impressions have the advantage that no tracing has taken place: they are the nearest we can get to the lost fair drawings. *Figure 7* shows an example from Auldearn, just east of Nairn. A building stands on the edge of a quarry to which the name ‘Chimney’ has been applied. This might be taken to mean that the projection at the north corner of the building is a tall chimney; but chimneys are normally square or round, and this projection is rectangular. On the left is the blue, unobscured by later drawing, because by 1905 the building had been demolished. The blue may be ambiguous as to whether the chimney is square or round but it is at least consistent with it being one or the other. The blue is by no means easy to read: there is rock-drawing to the east of the building and a rather large parcel brace running across it that might at first be

⁸ One reason for this may be that the tertiary triangulation was computed on a county basis and no attempt was made to ensure agreement across county boundaries - see Winterbotham, p36.

⁹ For examples, see my articles in *Sheetlines* 119 and 121.

taken to show a westerly projection. That, I am afraid, is typical of parish impressions from around 1870. But a blurred view of the fair drawing is better than nothing.



Figure 7: Nairn 2-9 (*Auldearn*) showing building at Kingsteps Quarry

The position when using blues derived from card revision is somewhat different. The image quality is better; what we see is probably a tracing, but it often seems to have been done with more care than the litho-tracing for the published map. At the very least it offers an alternative view, with a different set of errors.

With blues of both these sorts, one should not place too much importance on the *absence* of a line. Reproduction could be patchy: not every line comes out. The absence of an entire feature is a different matter, but with blues from card revision the user should look for notes that features in a particular area have been omitted because of inconsistencies in positioning.

‘Extra detail’ is something one obtains from blues derived from card revision. It comes about in three ways. The first was the use by the revisers of an ‘X’ - seemingly to indicate a ruin. This was not yet regarded as a proper symbol for published maps, being used for a building with an open passage at ground-floor level, so was simply ignored by the draughtsman. Buildings with this symbol are usually unroofed but occasionally roofed; in the former case the map might imply a ruin or might indicate that what had been a building was now simply an enclosure. The second way was from the reviser including detail like garden paths that the printed instructions now said should be omitted. Often this seems to have been done for a reason. For example, the paths in a kitchen garden or a nursery indicate its function; a bare rectangular enclosure could be anything. At an institution, like Bangour Village (on Linlthgowshire 7.12), a path to a front door may indicate the superintendent’s house.

The third way, generalisation by the draughtsman, was fairly rare: revisers knew what the finished map was to look like and rarely drew more detail than the map could accommodate. One exception concerns tramways at mines. Narrow-gauge tramways from pit-head to spoil heaps are often drawn by the reviser with double track and then simplified by the draughtsman to show just outer bounding lines. The Shale Oil Works at *Figure 8* provides a more extensive example which is easy to read because the old installation had been demolished by 1914, leaving an unusually clear blue. The published 1897 map to the right shows four long rectangular blocks linked in some way at the ends. The blue shows that these blocks are divided into cells. It also shows at the north end what may be a

tramway - or is it a pipe? - curving into the ends of the northern block. To the NW of this block one sees an example of a double-track tramway replaced on the published map by just its outer bounding lines.



Figure 8: Linlithgow n8.3 showing Albyn Oil Wks with 1897 depiction on Linlithgow 6.11 to right.

‘Unpublished material’ sounds exciting, but it can be difficult to exploit. The commonest case is the Land Valuation revision. As noted earlier, one sees it on sheets that were revised properly only a few years later, so there aren’t many differences. It is difficult to use the blue to assert that a building was present in 1911/12 because such buildings are normally overdrawn on black. One can, with caution, assert that buildings present on the previous revision had vanished by 1912 when there is no sign of them on the blue. If the deduction is at all important, it ought to be confirmed by inspecting the LV revisions themselves, which are generally available, albeit not online.

Only a single example - Ayr - has been encountered of a 1:500 town survey used as a blue which was not subject to copyright deposit. It seemed not to have much detail beyond that shown on the 25-inch: figure 5 was something of an exception. Once again there is scope here for arguing that a feature shown on the 1895 25-inch had vanished by 1905 because it cannot be seen on the blue. Again, important deductions are best confirmed by searching out a printed copy of the 1905 survey.

A previously unknown (and presumably unpublished) ‘Incomplete Advance Edition’ of 1938, covering Stirlingshire 17.3 and 17.7 was discovered to have been used as the blue for a 1942 revision of these sheets published 1947. There had been few changes between 1938 and 1942 but one of these (Figure 9) involved the demolition of what is thought to have been the southern stand at the football ground used by what was then Stirling’s main football club. This is understood to have been occasioned by one of the two German bombs to fall on Stirling during the War. What is not in doubt is that the stand in 1938 had been enlarged since its previous depiction in 1913, an enlargement that seems not to have been recorded in any of the histories of the club accessible online. In this case, using the

absence of a structure on the blue to deduce that it was present in 1938 is complicated by the uncertainty of exactly what an 'Incomplete Advance Edition' was - ie the nature of the incompleteness.

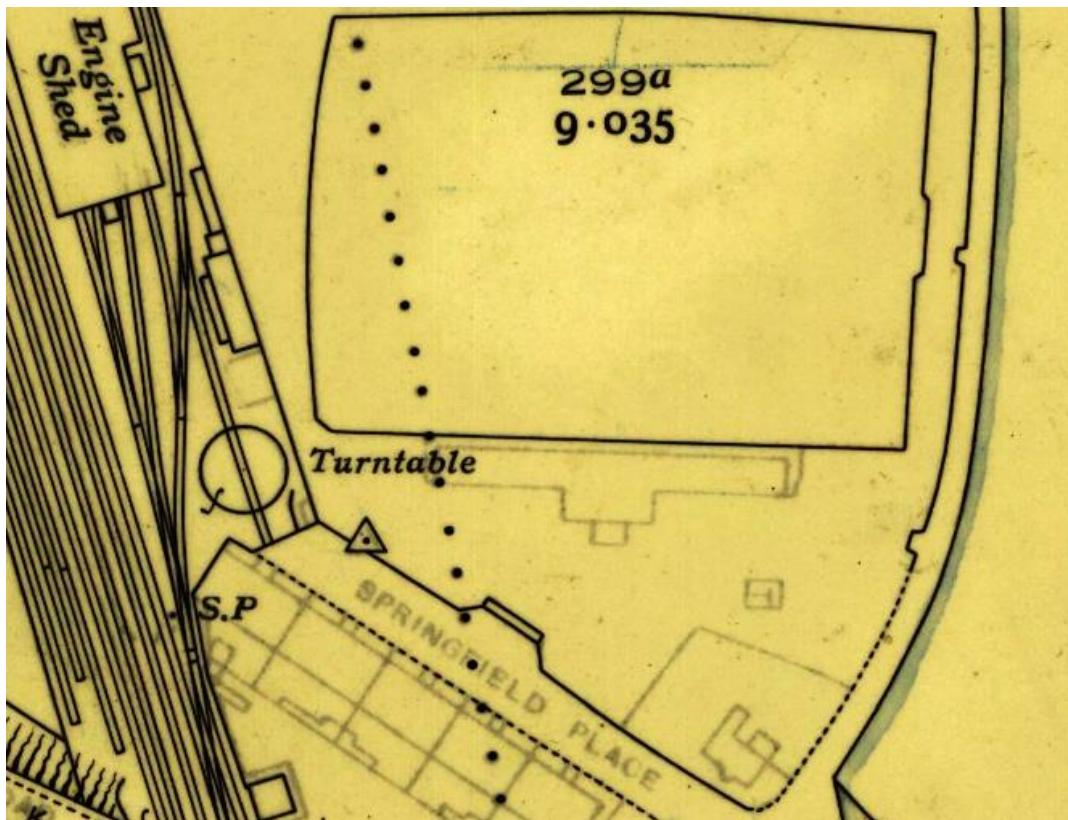


Figure 9: Stirling n17.3 of 1947. The blue, from a 1938 edition, shows a football stand that had been demolished by 1942.

The last category of unpublished material concerns the “final revision” mentioned by Winterbotham as part of the card revision process. It appears to have been done - sometimes at least - using a proof of the printed map; in such cases, any changes required must have been made directly on the plates. Where those changes reflected changes on the ground since the normal revision process, the cards (and blues derived from them) provide the only record of what had been there earlier. Such changes do not seem to have been common, but they are worth looking out for.

Gross positional errors

I started this account by explaining how the graphic style of revision practised by OS depended on the work to be revised being of the highest standard, yet successive revisions inevitably resulted in a weakening of that standard. There was a tendency on the part of Directors-General - apparent in Winterbotham's writing - to attribute blame to bad decisions in the past which had now been rectified. Thus the re-plot exercise was a grievous short-cut but that was now past; card revision was a bad technique and that too was something the OS had (largely) put behind it. By implication, current practice was much more satisfactory and there was no cause for alarm.

One thing that emerges from inspecting a lot of these master drawings is that revisers working with card-derived material often found it necessary to correct general shifts in the blues they were presented with, even though attempts had been made in the office to

correct such shifts by reference back to the original fair drawings. One wonders how a reviser proceeded when doubt had been cast in this way on the features he would normally have used in graphic revision. Did he run numerous chain-lines? Or did he recognise a general shift and compensate for it over an area without testing every feature within that area?

In addition to such general shifts, one finds occasional large displacements that can only be attributed to gross error on the part of the first revisers. *Figure 10* provides an example.

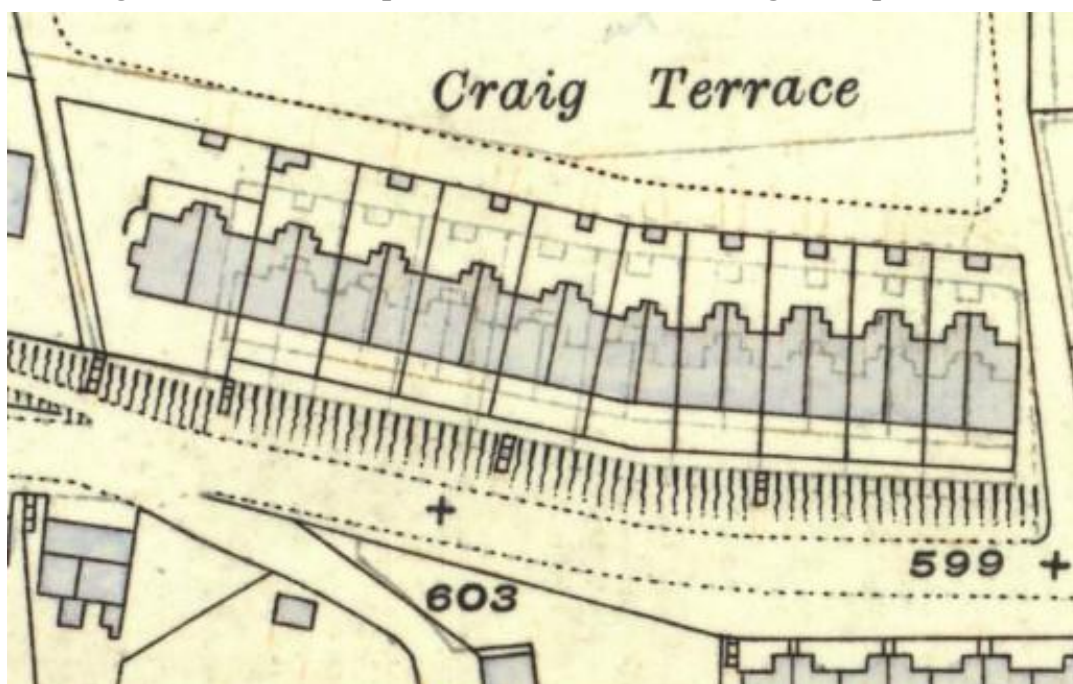


Figure 10. Linlithgow n10.3 of 1916 with a terrace at Blackridge displaced by 5m.

We know about these errors because they were spotted in the second revision and corrected. But how many errors of this nature were not spotted? And were the revisers on that second revision just as prone to making errors of this nature themselves? These are topics I cannot address here. They were actually reviewed under Close in 1911¹⁰ and recommendations were made, notably the use of electricity pylons as tertiary trigs¹¹ so that there was a density of at least six trigs per sheet. I am not aware that any of these recommendations were implemented.

The problem was in the end solved by the Davidson Committee, which offered an opportunity for the Survey to confess its problem and came up with the reassuring recommendation that a new survey was needed for the new generation plans on National Grid sheet lines. That the resources were not available for a full re-survey was, in a sense, not a problem. Once the need had been recognised it was possible to proceed on the basis that those areas that had not been resurveyed would be managed in a way that did at least minimise the rate of deterioration. It was a healthier situation than the 1930s' pretence that all was well when it clearly wasn't.

¹⁰ Results were summarised in Winterbotham, *The National Plans*, 31-33.

¹¹ As up-stations (intersection points). Although the view from the top of a pylon would be outstanding, it never seems to have been suggested that surveyors should be expected to climb them! And electricity pylons in 1911 were perhaps no more than single poles - 'standards' is the term used.