



Sheetlines

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

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THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps
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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

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.



SHEETLINES

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Editorial

Eclipses - Now and Then

I write this having just watched the sun disappear behind the moon. It was certainly an incredible sight to see, and here in Kent I was fortunate that the sky was reasonably clear. It is perhaps a shame that the Ordnance Survey did not make a little more of it. They have dedicated a number of pages on their website to various aspects of the eclipse – and produced 240,000 copies of a special eclipse map, and I did eventually find (free!) copies at the National Map Centre. Since then the Society has obtained copies of the map, and one is enclosed with this edition of *Sheetlines*. The last total eclipse to be seen in the UK occurred on 29th June 1927. On that occasion the Ordnance Survey published a ten mile map which showed the course of the eclipse (though it showed the course of the moon a mile south-east of its correct position, and the timings on the map were wrong, albeit by only 4 seconds). Then it passed over North Wales, Lancashire, the Yorkshire Dales and the North East of England – and I suspect that there was significantly less traffic congestion that time than Devon and Cornwall have seen this week. In a way it is perhaps a shame that technology moves on, and that OS did not market the map for this year better. While the map on the website is excellent and gives a lot of information very clearly; in a few weeks time the eclipse of 1999 will have been forgotten, and the pages on the website will have been consigned to the recycle bin of history. As things become increasingly digitalised it makes one wonder what we will have to collect and look at in future years.

Some of the information above on the eclipse map of 1927 has been taken from Roger Hellyer's excellent new book *Ordnance Survey Small Scale Map Indexes: 1801 – 1998*. There is a review of the book by Yolande Hodson on page 35 of this edition of *Sheetlines*.

You will perhaps notice that this edition of *Sheetlines* is a little thinner than those recently. While I hope that you will agree with me the quality is as high as usual, I would urge all potential authors to put pens to paper (or fingers to keyboards) and submit that article you've thought of writing for so long. Suggestions might include articles on the modern OS, its increasing myriad of digital products, War Revision maps, or perhaps on a new Landranger or Explorer that covers your area, similar to that in *Sheetlines* 52 about Landranger 139 *Birmingham and Wolverhampton*. I look forward to spending the autumn watching the postman struggling to our front door with sacks full of post!

Enclosed with this edition of *Sheetlines* is the 'Almanack' (if you can think of a better title for it please let the Committee know) which contains the membership list as at 1 August 1999, the minutes of the Annual General Meeting, and the publications list.

Jon Risby

Hodson Award

Rob Wheeler

The Committee intends to make another award from the fund established by Dr Y. Hodson in 1996. These awards are intended “for outstanding service to the aims of the Society” - which, for readers not having a copy of the constitution in front of them, are “to advance the education of the public by promoting interest in and research into the maps, plans, and other activities of the Ordnance Surveys of Great Britain and Ireland and by publishing the results of such research”. Nominations (with reasons) are invited from any member of the Society. Nominations should reach the Honorary Secretary by 1 December 1999. Members seeking further guidance on any aspect are welcome to make an informal approach to the Honorary Secretary (or indeed to any Committee member).

Proof Readers Required

The cartobibliographies in the first five Harry Margary Old Series volumes were compiled without access to computers. Equally Guy Messenger’s books on the one-inch Third Editions in England and Wales, and Scotland, and also his revisions of the first two of the Margary Old Series cartobibliographies, were all products of his faithful typewriter.

These source materials are all immensely valuable to researchers and collectors alike, but part of their value is that it encourages others to seek out information that they lack, principally in the form of unrecorded states of the maps they describe, or to correct information incorrectly recorded. It is the opinion of the committee that the value of these works would have permanent significance if they are made capable of revision and correction.

To that end all these texts have now been scanned and are now in preparation in digital form. But before we can proceed further with revising these lists, and inviting further revision from members and other interested researchers, it is essential that the scanned texts are properly proof read in order to weed out any errors created in the scanning process.

Any members interested in assisting with this task are invited to contact the Secretary of the Publications Subcommittee, Michael Cottrell, who can supply the texts which require proof reading. Volume III of Margary is already done, but volunteers are needed to read the others. Needless to say they will need to have access to copies of the Margary volumes, or Guy’s, to work from.

Oops! Landranger 191

I recently bought the revised (B1) edition of Landranger 191 *Okehampton & North Dartmoor*, which has a photograph of some ponies in Widecombe in the Moor on its cover. Unfortunately the caption beneath the picture says Widdecombe in the Moor.

Some notes on the origin of the Modified British System of the War Office Cassini Grid

Roger Hellyer

The War Office Cassini Grid has been the subject of discussion in *Sheetlines* and elsewhere in recent times¹, and I do not seek to repeat here more than is necessary what has previously been recounted. Its early form, the British System, was first used following the First World War on the new 1:20,000 military map of Great Britain, GSGS 2748, also, from 1925 the 1:25,344 Map of East Anglia, GSGS 3036. It was introduced to the one-inch map with the adoption of the Popular Edition as the military training map in 1923, and its use at that scale was extended into Scotland from 1925 as publication of Popular Edition sheets north of the border began. (For those readers familiar with the difference between its British and Modified British Systems, please skip the remainder of this introduction.) The British System was devised for use on these comparatively large-scale maps, and it was organised into 50 by 50 km squares subdivided into 10 by 10 km sectors each given one of 25 letter designations. These were subdivided further by a lattice of 1000 by 1000 metre squares. While at the corners of the 1:20,000 and in the margins of the one-inch at 10 km intervals were provided the full distance, in metres, away from the false origin of the grid, this information was ignored for the purposes of providing grid references, which were measured east and north from the points where these full co-ordinates were located, prefaced by the individual letter allocated to that 10 by 10 km square. Thus every point of intersection on the 1000 metre lattice had a value between 0 and 9 (thousand metres) east and 0 and 9 (thousand metres) north of the origin of its sector. With the easting nominated before the northing, this had the effect of values which appeared to increase in tens west to east (eg 00 via 10 to 90), but by ones south to north (eg 00 via 01 to 09). These co-ordinate values indeed appear throughout the 1:20,000 GSGS 2748², but were not considered necessary on the one-inch where the user was presumably thought able to visualise them for him or herself.

It was anticipated that on maps at the one-inch scale and larger no problems would result from the fact that these values, one letter and two figures, repeated at a distance of only 50 kilometres. However, when the use of the grid came to be extended to maps of much smaller scale, it was inevitable that the same map reference would occur more than once on the same sheet. This necessitated a modification to the co-ordinate system. The one adopted increased the area controlled by a single letter from 10 by 10 km to 100 by 100 km. Such letter references only repeated at a distance of 500 kilometres, and this would be even further if a second, superior, prefatory letter was used. On the 1:25,000 GSGS 3906, the map which replaced the 1:20,000 GSGS 2748 in 1931, double-digit values were displayed in the borders at all points of intersection on the 1000 metre lattice, and similarly they also appeared for the first time on the one-inch. But the values displayed now measured something entirely different, being part of actual distances east or north of the false origin of

¹ Brian Adams, '198 years and 153 meridians, 152 defunct', *Sheetlines* 25 (1989), 3-7; Brian Adams' Appendix 1 in Roger Hellyer *The 'Ten-mile' Maps of the Ordnance Surveys*, London, Charles Close Society, 1992; Tim Nicholson, 'One-inch military 'Specials' 1923-40', *Sheetlines* 33 (1992), 21-34; Richard Oliver, 'The evolution of the Ordnance Survey National Grid', *Sheetlines* 43 (1995), 25-46.

² Illustrated by Richard Oliver in *Sheetlines* 43 (1995), 31.

the grid, lying to the south-west of the Isles of Scilly. The full distances from the false origin continue to appear in the sheet corners of the 1:25,000, shown in metres, whereas on the one-inch a simpler method (also displayed at the intermediate point on the 1:25,000) which shows the distance, in kilometres, at 10 kilometre intervals around the border was preferred³. In each case the 100 kilometre figure is apparently of less importance and shown smaller than the tens and units, and these last increase in each direction from 00 to 99 before repeating. It is the combination of the ignored 100 kilometre values which convert to the letter reference, and, for instance, the 100 by 100 km square which has its south-west corner 5 (hundred kilometres) east and 1 (hundred kilometres) north of the false origin converts to square Q. This square contains London.

This new system, known in full as the War Office Cassini Grid (Modified British System), proved suitable for maps at the quarter-inch or ten-mile scale as well as the one-inch. The second superior letter did indeed appear on the first small-scale maps to be covered by the Cassini Grid, the Royal Air Force quarter-inch in England and Wales (1932) and the Great Britain ten-mile (in existence but still not recorded before 1934), also the Military Editions at both scales, GSGS 3950 and 3955 respectively, both issued in 1934. But when the quarter-inch Military Edition was transferred from the Third to the new civilian Fourth Edition base, GSGS 3957 in England and Wales (1937) and GSGS 3958 in Scotland (1939), the second letter was not displayed. It was restored at least to marginal calculations when the layer colours were altered on these maps from brown to purple during the Second World War. This short article offers some information on two episodes so far unrecorded in *Sheetlines* in the transformation from British to Modified British System.

1. The 1926 County of London map

Two articles by Christopher Board provide information on the history of this remarkable 1:20,000 map of the *County of London*⁴. It was issued by the War Office as GSGS 3786 in 1926, and to some copies (numbered GSGS 3786A) was added an overprint carrying secret information, specifically the location of police, power and fire stations, military boundaries and installations, for official use by the Government and the law-enforcing authorities, the police and even the military, during the General Strike. Without the overprint the London map had a longer term use, and it was still on indexes of 1:20,000 military maps issued in 1929. As with GSGS 2748, the 1:20,000 Map of Great Britain, the map was constructed on Cassini's projection on the origin of Dunnose, and the Cassini Grid it carries is square with its sheet lines. The grid lines are spaced at one kilometre intervals, but a feature of this map that appears to be unprecedented is the way in which they are numbered, which conforms in almost all respects to the principle of the (?yet to be invented) Modified British System of the War Office Cassini Grid. The full grid co-ordinates, showing in metres the distances from the false origin of the grid, appear at the sheet corners. At the south-west corner these are 562,000 metres east and 188,000 metres north. As with the Modified British System, the first figure is then ignored and at each kilometre step is shown as an increase of one eastwards from 62 and northwards from 88. The only thing lacking from the Modified

³ Illustrated by Richard Oliver in *Sheetlines* 43 (1995), 41, figure 19.

⁴ Christopher Board, 'The secret map of the County of London, 1926, and its sequels', *London Topographical Record* 27 (1995), 257-280; 'The three-inch map of London, and its predecessors of 1926', *Sheetlines* 43 (1995), 48-50.

British System here is the translation of those first digits, 5 (hundred) and 1 (hundred), into the square Q.

The Appendix to the Gazetteer⁵ provides the reason why the current British System had in this instance to be abandoned; that the letters and co-ordinate figures conventionally placed on the map face would in such a built-up area have obliterated important street names and buildings.

Below. The appendix to the *Gazetteer to accompany the 1:20000 Map of the County of London* (author's collection)

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APPENDIX.

SYSTEM OF REFERENCE.

The grid is a kilometric grid; that is to say, the dividing lines of squares are at each kilometre.

It is not possible to overprint the letters and "square" co-ordinates of the normal grid system, because important street names and buildings would have been obliterated by them.

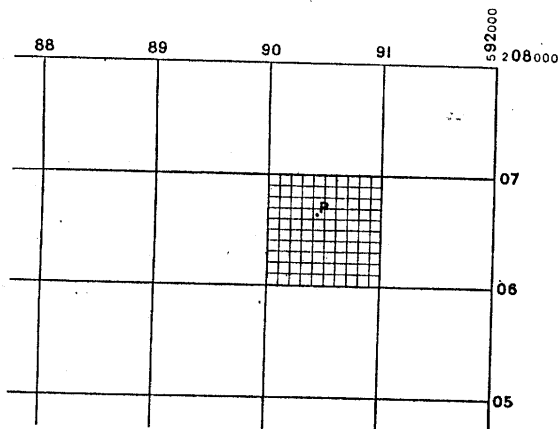


Fig. 1

Figure 1 shows the system used. References are given to six figures (three Eastings and three Northings). The first two figures of the easting are those shown in the margin against the grid line forming the west side of the square in which the point lies; the first two figures of the northing, those shown against the grid line forming the south side of the square. The last figures (Easting and Northing) are added by estimation to the nearest tenth of a kilometre. For example, the point P would be described as 904066.

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For the corners full metre co-ordinates are given.

The incidence, on the grid, of the letters of the normal system is shown in Figure 2.

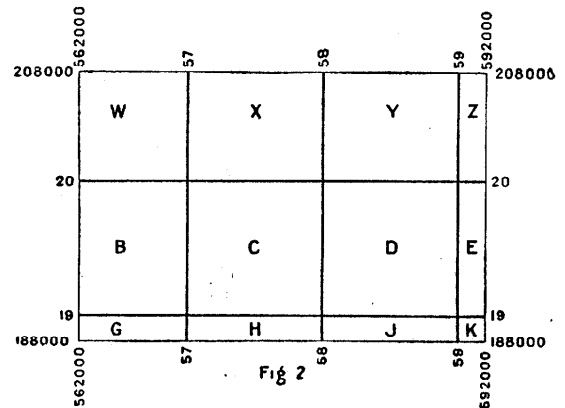


Fig 2

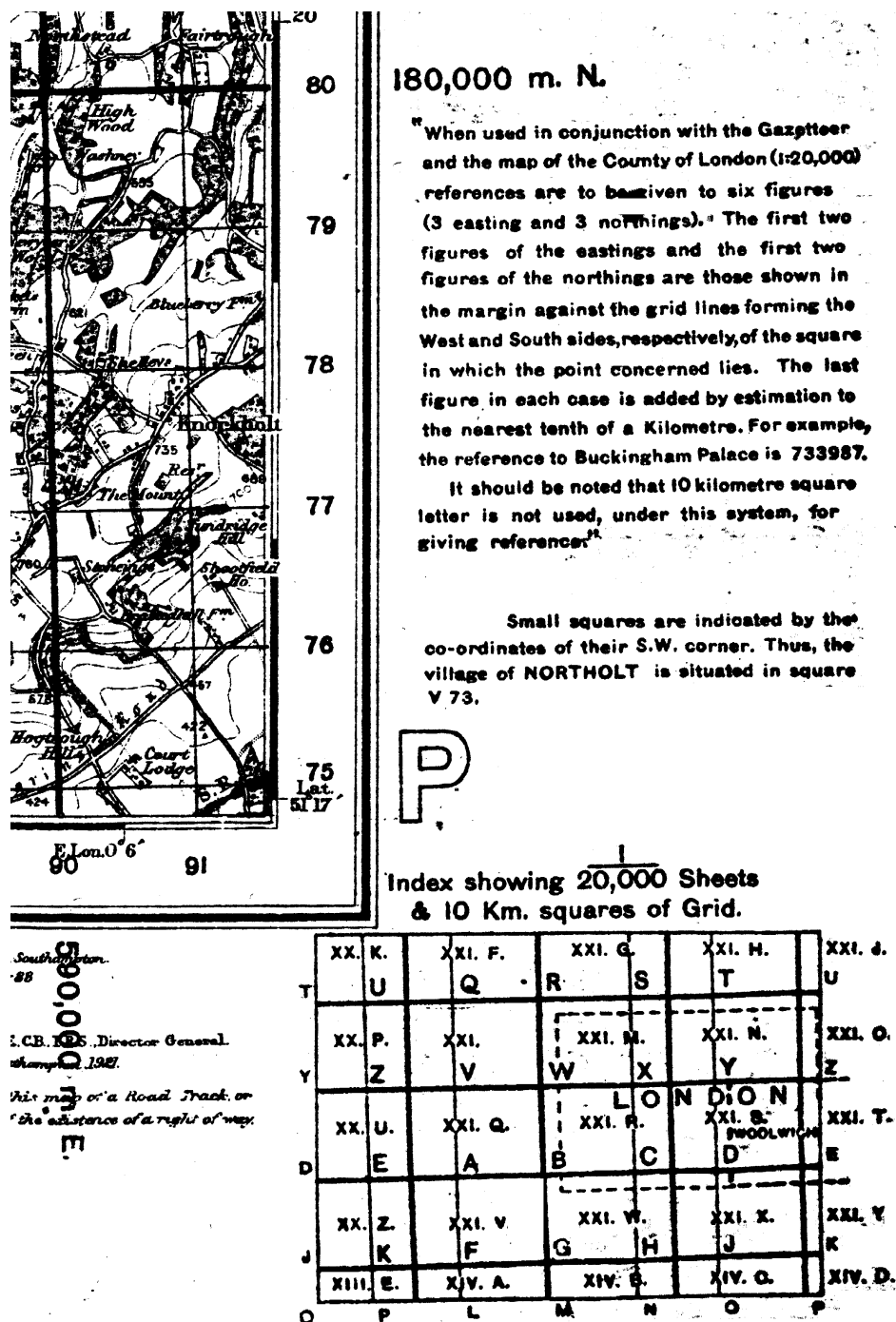
(C7347)

⁵ *Gazetteer to accompany the 1:20000 Map of the County of London*, London, The War Office, 1926.

Without their letter references the usual co-ordinate values would have repeated at ten-kilometre intervals, or up to six times within the area of this map alone; hence the need for a substitute system. References in the gazetteer are given to six figures, three eastings and three northings, the first two provided by the values in the margins, the third to be estimated. The appendix concludes with a diagram showing the incidence of the usual British System letter references.

There is a second map which was similarly treated. In 1928, perhaps earlier, a companion one-inch map was published. This was a military edition of the London Tourist Map coloured in the conventional Popular Edition style, without enhanced hill colouring but with woods in green. The copy seen carries the print code WO 500/28, and is based on the

Illustration 2 (below) The instructions for use in the south-west corner of the London (Tourist Map), which refer to the gazetteer of the 1:20,000 (author's collection). Note both types of grid co-ordinate.



5000/27 civilian printing. The military magnetic variation date is January 1927, so there may indeed have been an earlier issue. The military heading, on the purple overprint plate carrying the grid, is *London (Tourist Map)*, in the top right hand corner. In the margins are the full data of the current British System of the War Office Cassini Grid, and the 10 by 10 km control letters are in place on the map face. But the map also carries an additional co-ordinate system in the border, the same sequence of two-digit values as on the 1:20,000 London map, and as would later be found on maps carrying the Modified British System. The additional “hundred kilometre” digit included in the modified system at ten kilometre intervals is not present. A note links this system of reference directly to the 1:20,000 Gazetteer, and the usual marginal index showing 1:20,000 sheets also carries the sheet lines of the 1:20,000 London map. But the same instructions also direct the user to the ordinary British System of co-ordinates (see illustration 2 opposite).

In seeking a substitute reference system, the Geographical Section of the General Staff had an immediate aim common for both 1:20,000 and one-inch maps, to provide unique references in a gazetteer covering the London area which bypassed the literal controls of the current British System grid. But what is far more interesting is that even before 1926 they clearly had already considered the need for a co-ordinate system with the capacity of covering the whole of Great Britain, without any repetition in its values. After all if their concern was for maps of London alone, the values could more obviously have begun at zero in the south-west corner of a much more local area, similar to the three-inch map of Guernsey of 1934. Instead a system was used based on a measurement of the distance from the false origin of the grid. It is quite conceivable that they had the entire Modified British System of the War Office Cassini Grid theoretically worked out even at this stage, letter references included. Certainly some method of evaluating the 100 by 100 km squares had been invented. And if, in the case of the square containing London, the letter Q was as yet unborn, the numerical value 51, derived from the co-ordinates 5 (hundred km east) and 1 (hundred km north) was the obvious alternative. Either way, their omission here does not prove they did not exist, rather that over the area of these maps they were an unnecessary irrelevance. One wonders how much the military’s experience in the use of these maps influenced their thinking when the conversion to the new system became inescapable.

2. The 1928 manoeuvre maps

Military manoeuvres requiring maps seem to have been resumed after the First World War only in 1925⁶, and these were followed in 1927 with manoeuvres at Winchester in May⁷. For both occasions one-inch maps were specially made, and incorporated the British System grid. On both occasions the smaller scale maps used, at the quarter-inch scale in 1925 and the ten-mile in 1927, retained the civilian alpha-numeric two-inch squaring systems.

The Director’s second conference at the Winchester manoeuvres was held on 11 May 1927, when, in his concluding summary, the Chief of the Imperial General Staff brought up the subject of the army’s use of what he referred to as large scale maps.

⁶ *Report on Army Manoeuvres 1925*, PRO WO 279/56.

⁷ *Report on War Office Exercise No.2 (1927) Winchester, 9th to 12th May*, PRO WO 279/59.

I notice that you use the one-inch map when writing orders. For smaller formations, for units, and for certain forms of training, the one-inch map is possibly very suitable, but you may have to operate in a country which has no one-inch map, it may not even have a map at four miles to the inch. We must get accustomed to using maps of smaller scale than the one-inch. It was laid down before the war that the quarter-inch should be used. The one-inch is much too easy to write orders from.

The Geographical Section of the General Staff looked into the problem and one year later, at the Harrogate manoeuvres in May, provided three maps, all incorporating an experimental form of what would three years later become the Modified British System of the War Office Cassini Grid. Perhaps in order to demonstrate the suitability of the new reference system to maps of all scales, the three maps were at the 1:20,000, a special map of the Ripon area (the only example known in any of the inter-war manoeuvres), the one-inch (Popular Edition Sheet 26, 1924, 3000/27, WO reprint 3750/28) and quarter-inch (Third Edition Sheet 3).

Colonel Winterbotham's explanation of the modification of the system of map co-ordinates, delivered at the final conference of the manoeuvres, appears in the report⁸:

The object of modification is to make it possible to write orders on a small scale map. The system brought into force after the war was framed for a 1/20,000 map. The modification makes it possible to use the same system on all maps between 10 miles to the inch and 3 inches to the mile.

At the 1927 Winchester exercise the C.I.G.S. told us to be prepared to write orders on the quarter-inch map. When the Shanghai Defence Force left for China, the only possible maps of the areas in which Shanghai, Tientsin and Hong Kong lie were quarter-inch maps. For both these reasons a modification of our ordinary system became essential. The present map policy is that everyone shall have that scale of map which best suits his purpose, and that all shall be capable of use with the system of co-ordinates on which orders are framed.

To make this possible the size of the square has been enlarged ten times⁹. The 10-mile-to-the-inch map appears then on the modified system exactly as the one-inch does on the present system. On the modified system the one-inch reference has therefore to have an extra figure in each co-ordinate. The decimal point has been moved one back. The whole of the modification is summed up in that sentence.

I expect that any criticism that arises will be rather to the effect that too little change has been made and that the scheme is not perhaps logical and mathematical enough to suit some people. We have, however, endeavoured to keep it as simple as possible for the benefit of the rank and file, and I think that a little practice will show that it is extraordinarily easy. We have endeavoured by adding figures on the face of the map to make it as foolproof as possible.

The co-ordinate system as shown on the maps was in essence the same as would be generally used once the Modified British System was in use. The 100 by 100 km squares are

⁸ *Report on War Office Exercise No.5 (1928) Harrogate, 15th to 18th May*, PRO WO 279/64, 37. Part VIII: Final Conference: 4. Modification of the System of Map Co-ordinates.

⁹ In fact the size of the square has been enlarged by a factor of one hundred; it is of course the side of the square that is enlarged tenfold.

each given a reference letter. The one-inch and 1:20,000 maps show eastings and northings in kilometres (00 to 99) at one-kilometre intervals from the south-west corner of each 100 by 100 km square; they are measured on the quarter-inch map at ten kilometre intervals using a single digit to express the tens. Repeat values are shown at intervals across the map face. Included here but later dropped in the modified system from the one-inch scale and smaller are the distances, calculated in metres from the false origin of the grid, displayed at the nearest convenient reference points to the sheet corners.

And it is the origin of their grid that marks these three maps as unique. The true origin is not Dunnose, as was traditional with the War Office Cassini Grid, but Delamere. And though Delamere was the true origin, it was not the point from which grid calculations were made. That was at a false origin near Atherton, 31,633.2 feet east and 111,191.2 feet north of the true origin at Delamere (War Office Cassini Grid vE 110244).

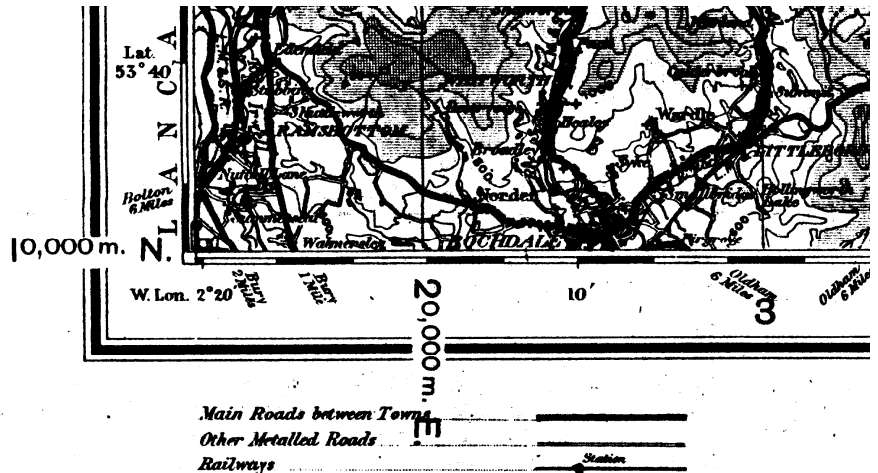


Illustration 3a (above right). South-west corner of Sheet 3 of the 1928 quarter-inch military exercise map.

TO GIVE A GRID REFERENCE ON THIS SHEET			
LETTER See diagram of INCIDENCE OF LETTERS			
FIGURES Pay no attention to the smaller coordinate figures at the corners and in margins. They are for finding full coordinates, viz. 102			
PAY ATTENTION TO LARGER MARGINAL FIGURES AND TO THOSE PRINTED ON THE FACE OF THE MAP, VIZ. '00			
POINT	SLINGSBY	STA.	LETTER G
East	0	North	7
Take west edge of square in which point lies and read the figures printed opposite this line (on north or south margin) or on the line itself (on the face of the map.)	5	Take south edge of square in which point lies and read the figures printed opposite this line on east or west margin or on the line itself (on the face of the map.)	3
Estimate tenths eastwards	0 5	Estimate tenths northwards	7 3
East		North	
REFERENCE G 0573			
Unit.....metre			
Square.....10000			
Reference to nearest.....1000			
Nearest similar reference distant 300 miles			

Illustration 3b (left). The instructions for use on Sheet 3 of the 1928 quarter-inch military exercise map (author's collection).

One consequence of this choice of grid was, of course, to make the grid and sheet lines of the one-inch and quarter-inch maps parallel and perpendicular with each other, since they now shared a common origin. In contrast, the 1:20,000 map, a reduced scale composite of Yorkshire six-inch sheets 101SE, 102SW, 102SE, 103SW, 118NE, 118SE, 119, 120NW, 120SW,

136NE, 137NW, 137NE, 138NW, was at an angle to it since the origin of Yorkshire large-scale mapping was York Minster. The one significant effect of the apparently random choice of false origin is that the southern neat line of the quarter-inch map falls precisely on the 10,000 metre north co-ordinate (see above). There appears to be no obvious reason for the choice of easting. The 100 by 100 km square with its south-west corner at the false origin is lettered F, with square A above it.

There is no explanation offered in Winterbotham's summary as to why a new origin should have been chosen. Certainly the choice can only have been viewed with this particular exercise in mind, with no long term implications, since if any thought had been given to altering the true origin of the grid generally to Delamere, without a doubt a suitable false origin would have been chosen south and west of the land mass, of the Isles of Scilly,

in order that grid values generally throughout the country would be positive. Probably the sole reason was to avoid any conceivable confusion between this experimental grid and the conventional War Office Cassini¹⁰.

It was to be another three years before the modified system of the Cassini Grid came into general use in Great Britain, though it was taken up for use abroad immediately. Other manoeuvres in 1928, and through 1929 into 1930 returned to the use of the British System for the one-inch map, and to the traditional alpha-numeric squares for maps at the quarter-inch and ten-mile scales. According to the 1929 *Manual of Map Reading*¹¹, the Modified British System was already in use on maps used for training overseas, but it is silent as to whether the maps themselves were British or of foreign origin.

3. Royal Air Force Editions

There was in the late 1920s a further extension of the British System grid which should perhaps be introduced here for the sake of completeness. The British System was in fact applied to quarter-inch maps, and perhaps even to ten-mile maps, designed for use by the Royal Air Force. In the case of the quarter-inch, examples are known in both England and Wales, and Scotland, dated between 1928 and 1932, though documentary evidence suggests they may have been introduced even earlier¹². No ten-mile maps of this type have yet been recorded. Unamended, of course, the grid would have been useless - worse, dangerous - on maps of this scale with so many repeats of the basic grid reference within a single sheet. In the light of the developments described above, it is perhaps surprising to discover that the extended system chosen followed an independent path. It may have served its function well, but as part of the overall scheme was no more than a cul-de-sac. Perhaps it was a product of the Air Ministry or the Ordnance Survey rather than the War Office.

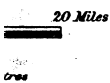
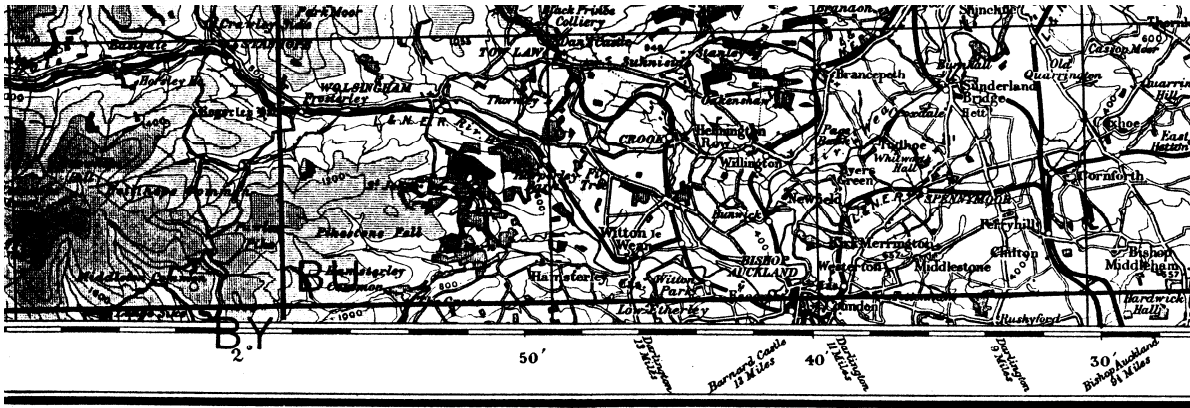
Each 50 by 50 km square, subdivided as usual into 25 individually lettered squares of 10 by 10 km, was itself identified by a similar single letter reference, and the greater 250 by 250 km squares of which they now formed sectors were similarly identified. The letter references of the 250 and 50 km squares appeared in north-east and south-west corner of each 50 by 50 km square; the user worked out the third (10 km) square letter reference for him or herself, with the aid of a diagram in the margin, and would then subdivide the 10 km squares eastwards and northwards by eye. Thus a grid reference comprised three letters and two figures to the nearest kilometre (see illustration 4 opposite).

No reference is made on the map to the War Office Cassini Grid, and no numerical values are provided relating to the origin of the grid. Indeed to all intents and purposes the grid itself was irrelevant to the system of reference in use here, and might be overlooked entirely - but that it falls across the sheet lines at an angle.

¹⁰ As Richard Oliver pointed out in private correspondence, something similar occurred in Viscount Davidson's *Final Report of the Departmental Committee on the Ordnance Survey*, London, HMSO, 1938, where the grid specimens display a theoretical, not an actual, grid.

¹¹ *Manual of map reading, photo reading, and field sketching*, London, War Office, 1929.

¹² PRO OS 1/456.



REFERENCES TO A SQUARE.

Each big square (50 kilometres side) is given a two letter reference which is shown in the corner of the square.

The small squares (10 kilometres side), 25 in number are lettered A to Z omitting the letter I as shown in diagram.

For Example—

CULLERCOATS D.F.Sta. is in square BUD.

CRAMLINGTON aerodrome is in square BUC.

REFERENCES TO A POINT IN A SQUARE

Estimate tenths (i.e. kilometres) eastwards and then northwards in the usual manner.

For Example—

CARLISLE race course is BSO 94

DURHAM race course is BUS 94

A	B	C	D	E
F	G	H	J	K
L	M	N	O	P
Q	R	S	T	U
V	W	X	Y	Z

AIR

Illustration 4. The instructions for use in the south-east corner of Sheet 1 of the quarter-inch Royal Air Force Edition, reprinted 1932 (author's collection). Note the double letters in the corner of the 50 by 50 km squares (shown more clearly below, from the same map).

My thanks to Brian Adams and Richard Oliver for advice and information which furnishes this article with a degree of accuracy it would otherwise have lacked. Any surviving failings are mine, not theirs.

Some aspects of survey for the 1:10,000 map

John Cole

Under the title 'Campaigning At Home', *Sheetlines* 29 (January 1991) contains a stirring article reproduced from a journal of 1885. It is an account of the original six-inch to one mile survey of some of the Scottish islands in which no dramatic ingredient is lacking - adverse weather, treacherous seas and even if the natives were not hostile, the terrain usually was!

My own exploits compressed into the summer months of 1980 are puny in comparison not only in the light of the above but also compared with those of the dedicated 1:10,000 surveyor in Scotland, Wales and Northern England during the 1960s and 70s.

The Ordnance Survey history of operations is, as usual, complex. Of the sixteen original six-inch maps, seven were fully at that scale whilst the others contained one or

more 1:2500 scale quadrant. In addition there were some sixty plus 1:2500 maps of mainly moorland involved and the original survey date for the whole was during the 1880s.

In 1950 the basic six-inch area of the southern part of the moor was enlarged and revised by ground methods and in 1954 the first 'regular' national grid 1:10,560 maps were published. In 1964 the remaining northern portion of the moor was resurveyed - presumably by air survey methods followed by ground inspection and completion, and as in the southern portion the basic six-inch area had been enlarged.

My involvement was with the resurvey of the southern area south of the 80 grid line and arguably the more hospitable portion of the moor. Twelve maps were the subject of the survey (now at 1:10,000 scale) totalling 169 square kilometres and whilst only one was wholly basic 1:10,000 most of the others contained 1:2500 and downgraded 1:2500 which had to be revised for significant changes such as two instances of road alteration and widespread developments in the china clay industrial area.

The usual team of three surveyors and the supervisor, joined by a fourth surveyor due to work in Wales, then embarked on a one month course for which purpose an instructor was dispatched from Southampton. The outside element was conducted during a rather cold and wet April, on a small sector of one of the maps involved - SX57SE, and from my own point of view, the reduction in scale after years of 1:1250 and 1:2500 work took some getting used to.

Although a fairly comprehensive survey (including contours) had been carried out by machine plotting from air photos a certain amount of ground work was anticipated and indeed this proved to be the case.

The basic survey instruments to be used were the plane table in conjunction with a microptic alidade and a graduated staff¹³, a pocket sextant and a prismatic compass. There was also some training in subtense methods using a 3½ inch Tavistock theodolite. Apart from traversing to fix detail, the plane table and microptic alidade could be used to supply additional spot heights and to check or resurvey contours.

Adjudged suitably trained we accordingly set forth with well loaded back-packs (lunch, emergency rations, survival kit, binoculars, minor survey instruments etc.) and sketching case containing map, on the 1st of May. The weather marked an abrupt change from winter to spring in the shape of a considerable early morning snow fall and warm sunshine in the afternoon.

As the three surveyors were normally working on their own and not returning to the office at the end of the day a 'reporting in' by telephone procedure was adopted, and on one occasion emergency procedures were all ready to be activated when a surveyor working on the most remote map was late in reporting.

Usually the supervisor (but in one instance the Chief Surveyor for the area) assisted when plane table work became necessary. This appeared to be about once per map in my case and was as follows: SX57NW survey of boundary stones; 57NE survey of range notice boards; 67NW survey of fence; 57SE resurvey of contours in a wooded area; 56NE nil; 56SE survey of new ditch in vicinity of china clay workings.

None of the above implied shortcomings in the air survey plotting (with the possible exception of the contour incident) and in only one instance did it appear that some unnecessary detail had been supplied. This was in the form of groups of small circular objects other than hut-circles which were fairly widespread. The plotting had, in the main,

¹³ Superseded in the late 1980s by mini EDM (electronic distance measurement) equipment.

been done or supervised by a former colleague of ours who had worked in Cornwall and he had assumed that they might be evidence of old mine shafts or workings. Subsequent investigation revealed that these were probably craters caused by bombs (possibly jettisoned by allied aircraft) or shells of world war 2 vintage. It was also significant that one of Dartmoor's three military ranges affected the three most northerly sheets.

Apart from a good deal of walking, the completion of the survey presented no serious problem. Archaeological work had been completed at an earlier date and comparison of the 1:10,000 with the earlier 1:10,560 may not reveal great change. The most significant additions are the Dartmoor 'reaves', annotated as Boundary Work. Administrative boundaries had to be perambulated and the mereings revised, and names had to be checked. Some mention of the difficulties entailed regarding the latter was made in *Sheetlines* 47 (December 1996). A single name-book was to be compiled for each 1:10,000 map. In 1950 such a 'book' had been made for each individual kilometre square - a very wasteful procedure leading more often than not to a book containing one single namesheet. There were however many name authorisation sheets (OS230 and 231) which were extracted to include in the new namebooks. We were also provided with the old 'County Series' name books to aid research into queries and a fairly long list of 'new' names to be investigated. As a consequence many were found to be valid, duly authorised and added. Additionally some major positioning and spelling corrections were made, one dating back to 1950 but most to before the turn of the century.

A technical problem which arose was the reconciliation of the 1:10,000 edges with the 1:2500 or the downgraded 1:2500. By far the worst of these occurred in the wooded areas of 57SE and 56NE and the china clay area of 56SE which included a small village. Such problems were exacerbated by the rather unwise downgrading of the 1:2,500 which had taken place in 1950. In county series days only two six-inch maps and parts of four others had been basically surveyed at that scale.

In addition to the resurvey of the 1:10,000 a certain amount of revision had to be undertaken on the 1:2500 or downgraded 1:2500 which, with very few exceptions was some thirty years out of date.

The former having taken some three to four months now gave way to the latter which, in my sector, entailed a further three months work. In the downgraded area, apart from road alterations previously mentioned, this included tracks in the wooded area south of Postbridge and alterations to the granite quarry at Merrivale. On the 1:2500 although there were considerable changes on the maps in the Peter Tavy area, by far the greatest difficulty involved some thirteen maps in and around the china clay quarrying district of Lee Moor, and it proved possible to overcome this with up to date air photography obtained from one of the china clay concerns.

Mention should be made of the most remote of the 1:10,000 resurvey maps SX66NW and NE. The only road approach was from a northerly direction to Whiteworks. Thence on foot avoiding the impassable Foxtor Mires. The southern and eastern portions of SX66NW were reached by means of the trackbed of the dismantled Redlake railway and a four wheel drive vehicle. SX66NE was similarly lacking in vehicular accessibility and at least as far as the resurvey was concerned my colleagues had to walk further than I.

For the benefit of those with a small scales interest in the area, it might be claimed that the one-inch reviser did not walk these parts in 1957 thanks to the large scales revision of just a few years earlier. It was however a different story north of the 80 grid line (the

limit of the large scale work) and a comparison of the New Popular and Seventh Series sheet 175 illustrates this.

There is a curious omission on the derived first series (regular) 1:25,000 sheet SX57 whereby a section of wall from 591771 to 600783 is missing although shown on the 1:10,560. At the smaller scale it eventually reappeared on the OLM.

Whilst in the case of 1:1250 (*Sheetlines* 52) I compared an original map with its successor, in this instance 1:10,000 sheet SX57NE published 1982 is examined in the light of its predecessor at 1:10,560 published in 1957.

The survey diagram of the later map notes that two kilometre squares in the north west corner (5579, 5679) and five along the south edge (5575, 5675, 5775, 5875 and 5975,) were 'surveyed' (meaning in this case revised) at 1:2500 scale in 1951 but that they were 'published but no longer maintained at 1:2500 scale'.

Most of the alterations to detail were of a minor character. Traces of two old tracks had vanished although the whole of one and part of the other appear as bridleways on the Outdoor Leisure Map of Dartmoor. On the 1:10,560 the southernmost sections of the Cowsic River, Blackbrook River, River Walkham and even the Prison Leat are represented by double lines. Their shrinkage to single lines on the modern map points to changes in OS rules rather than climatic conditions.

In the extreme south western corner the B3357 (formerly A384) was resurveyed at Merrivale Bridge and there are various changes to the fields (belonging to HM Prison at Princetown) along the southern edge.

Of the archaeological sites 19 were resurveyed and in many cases the description altered, ten added and three obsoleted.

Administrative boundaries were perambulated and as opposed to the 1950s mapping, their mereings are shown.

Bench marks shown previously only at 1:2500 scale have been published at 1:10,000 and in the moorland area (and also the prison fields) many extra spot heights were determined by air survey with just one by ground methods, retained from the 1:10,560. Nine new and six edge names have been added. Five were obsoleted. Two altered positionally and one has had its spelling altered. Two of the last three are traceable back to the turn of the century. On page 125 of his celebrated 'Guide to Dartmoor' published in 1912, William Crossing writes 'Mis Tor Pan is undoubtedly the large rock basin¹⁴ on the mass of granite forming the southern part of the pile and yet by some strange mistake the name has been affixed in the Ordnance Maps to Mis Tor Marsh some third of a mile to the NE of the Tor.' Crossing makes more than a dozen references to OS maps in his work and is generally complimentary saying at the outset (page 8) 'The latest Ordnance Survey maps and maps that have been made from them, are the only ones that are reliable. Those published before 1884 are of very little use, being full of inaccuracies.' Nevertheless he pinpointed the above mistake and also the curious misspelling of Cosdon Beacon¹⁵ in the northern part of the moor. The misspelling of Rendlestone (Rundlestone is correct) also dates from the nineteenth century OS map but the incorrect repetition of the name Holming Beam inside Long Plantation appears to date from 1950. No reasons for these mistakes were ever clearly established.

¹⁴ Rock basin: a hollow in the granite on many tors. Formed naturally by the action of frost, rain and wind.

¹⁵ Thought to have been corrected on the one-inch revision of 1980. Until correction it had appeared as Cawsand Beacon

One of the obsoletions is worthy of comment. The 1980 1:10,000 maps and subsequent OLM of Dartmoor are the first in the area to show reaves as an archaeological feature, annotating them “as has been mentioned as Boundary Work”. At grid reference 5578 on the 1:10,560 appeared the name ‘Lanson Moor Reeve’ which was obsoleted on three counts. ‘Lanson’ is a local pronunciation of the word ‘Launceston’ which had applied to Launceston (altered to Langstone) Moor in (apparently) 1950. Reave is misspelt and in any case the boundary work involved (not depicted in 1950) falls just over the map edge at 5478 in SX57NW! In view of this confusion it was deemed wise to drop the name.

Finally there is considerably more height information supplied on the 1:10,000 map. Many additional spot heights determined by air survey (and thus shown in orange) appear, whilst bench marks and their values are shown in the downgraded 1:2500 areas.

OS occurrences in Ward Lock and other guidebooks

John Seeley

I have compiled a list of these rarities in the Ward Lock (WL) Red Guides of the 1930s, such as I know. The occurrences were for an undeciphered purpose by WL (other than lollipops at about one per year maybe?). Since there are rumours of other sightings, additions to the list would be welcome, as would a look by this correspondent at WL *Colchester*, *Filey*, *Liverpool*, *The Thames*, *Nottingham* and *Worcester* guides from the period. Whatever the publisher’s purpose, the map printers clearly took the opportunity to experiment with fewer colours (at low cost and discreetly) so as to achieve ‘proper’ map extracts, of striking and satisfying appearance.

The St Catherine Press guides from the 1940s¹ are a different situation because those printers (Barnicotts Ltd., The Wessex Press, Taunton) had been, as Barnicott and Pearce, OS agents in Wessex for the previous half century and were themselves publishers of whimsical guides for the local holiday trade containing redrawn OS map extracts. Barnicotts were therefore able to assemble out of date extracts, across sheetlines, for the intriguing covers they supplied to St Catherine Press; more of them are likely to be found.² Another half century on it is pleasing to know that this adventurous firm is still in the printing business, but no longer as publishers (of anything), or suppliers (of map extracts); I am advised that Barnicotts disposed of surplus material from the earlier period to a Bristol bookseller some years ago, and destroyed their records; a pity!

¹ *Sheetlines* 53, p53.

² M.J.Stacey, private advice of submission to *Sheetlines*.

Title on cover/ (on title page)	Year/ Edition	Position of extract	Scale	Area Extent/location	Colours	Printed by	Print ref.
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Ward Lock

Lynton, Lynmouth, Exmoor and District/(Minehead)	1932/33 12 th	Facing p. 23 Minehead section	1- inch	14"x18" "Minehead, Porlock and District"	Yes. No yellow or dark brown (road)	Bartho- lomew	1630
Buxton, the Peak, Dovedale/(etc)	1934/35 16 th	Faces p.9	1- inch	14 ½"x16 ½" "Buxton and the Peak"	As above	Bartho- lomew	1630
Falmouth, the Lizard, Truro and S. Cornwall/(St. Austell, Fowey) (See Ian O'Brien, <i>Sheetlines</i> 44, p48)	1935/36 9 th	Faces p.xvii	10 mile	11"x15" "SW England"	Yes. No yellow or green	OS	C.R 5210 10,000
		Faces p.39	1- inch	15"x13" "The Lizard"	Yes, with shading, no red or yellow	OS	C.R 5210 5,000
Portsmouth (See Ian O'Brien, <i>Sheetlines</i> 44, p48)	1935/36		½ inch	"S. Hants"	Yes, unshaded unlayered	OS	C.R 5210
			½ inch	"Isle of Wight"			
S Wales	1937/38		¼ inch	A,B,C,D (four toto)	Yes, unlayered	OS	C.R 5210
Folkestone, Sandgate, Hythe, Dymchurch/(Canterbury, N Romney, Littlestone, Rye etc)	1937/8 9 th	Faces p.1	½ inch	10"x13½" "S E. Kent"	Yes, with contours. No yellow or green	OS	C.R 5210
Torquay (See Ian O'Brien, <i>Sheetlines</i> 44, p48)	1937/38		½ inch	"S. Devon"		OS	C.R 5210

St Catherine's Press

Hampshire Highlands (25)	1947	Cover	¼ inch	7½"x5½" Andover/Newbury/Yateley/ Selborne	Yes. Blue & green only
Around Aldershot (45)	1947	Cover	½-inch	5½" x 7½" Crondall/Wokingham/Ascot/Seale	Yes. Blue & green only

Hope for rail travellers

Peter Warburton

A footnote to Alan Young's article in *Sheetlines* 54 mentioning the surfeit of Sherburns suffered by the North Eastern Railway prompts this note on the complicated rail situation in the Hope district of Flintshire. The lines of the Great Central and the London & North Western intersected there and each Company was keen to lay claim to Hope and to Pen-y-fford (also to Buckley)

The extended Hope family of stations comprised:

- | | | | |
|-----|----------------------------------------------|------|---------------|
| (1) | Hope Exchange (later Hope High Level) | GC | (Closed 1958) |
| (2) | Hope Exchange (later Hope Low Level) | L&NW | (Closed 1958) |
| (3) | Hope (later Hope and Pen-y-fford) | L&MW | (Closed 1962) |
| (4) | Pen-y-fford (later Pen-y-fford for Leeswood) | GC | |
| (5) | Hope Village (later Hope) | GC | |

Fit L&NW passengers from Chester descending at the first Hope nameboard they came across (3) could expect to reach the settlement of that name after a fifty minute walk. Leeswood hopefuls alighting at (4) faced a stiffer challenge - roughly the same distance, but uphill. They would have been wise to investigate the timetable possibilities of travelling to Mold and thence by the Mold and Brymbo single track line south east to Coed Talon (closed 1950). This would have been a scenically attractive stretch as well as an interesting test of the ticketing and fares systems.

Given the confusing range of choice and the potential pitfalls, passengers without local knowledge would have been well advised to refer to the map. If they had consulted OS sheets, they would have been well served.

By 1893 Old Series Sheet 79 SE marked (3) on the Chester and Mold Branch Railway, (4) and (5) on the Wrexham Mold & Connah's Quay Railway and Coed Talon on the Mold & Tryddin Branch, although only (3) was named (as Hope).

The Third Edition Small (108) and Large (43) Sheet Series of 1907 and 1909 provided identically improved data. Changes of ownership and description (GC, L&NW, Mold & Brymbo Branch) were recorded, stations (2) (3) (4) (5) and Coed Talon were marked and names were attached, for the first time, to Hope Exchange (2) and to Hope Village (5).

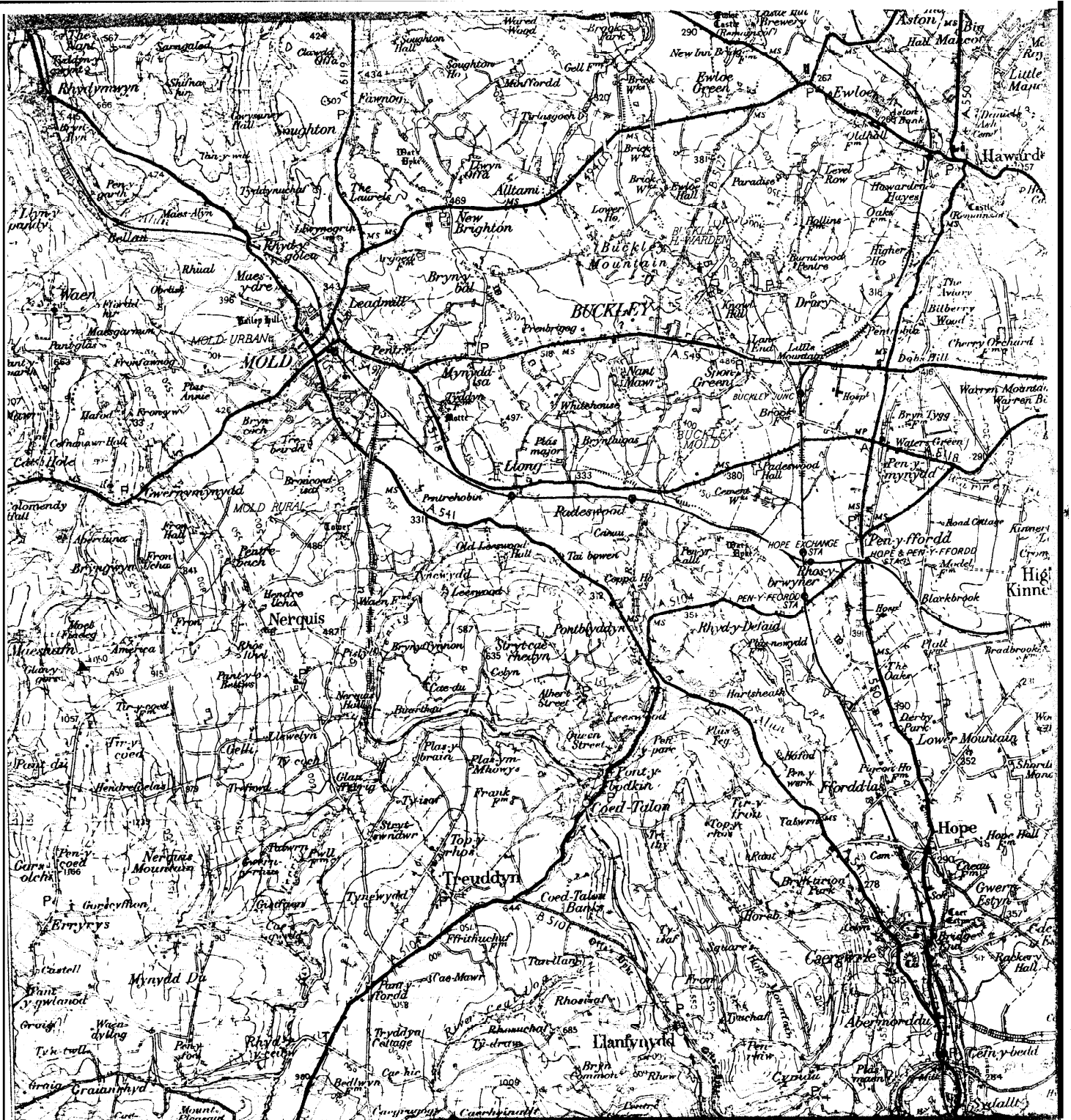
The Popular Edition (1924) was the first to show the southerly Hope Exchange Station (1) on the LM&SR and to name Pen-y-fford Station (4) on the L&NER. On the debit side, space was no longer found for the Hope Village name (5). The Mold & Brymbo Branch, by then the joint property of the LM&S and GWR, continued to provide a trickle of work for the Railway Clearing House until nationalisation.

The last relevant OS sheets were the early versions of Seventh Series 109. The illustration (overleaf) is from 4018 of 1952. Changes since the 1927 reprint Popular sheet were the addition of the full title of (3), already shown on War Revision 1940 Sheet 43, and the closure of Coed Talon. Over the whole period the OS did a good job in clarifying the Byzantine local rail arrangements. In particular, the naming of three stations as close as (2) (3) and (4) is unusual enough to suggest a conscious offer of guidance to the bemused.

The Seventh Series faithfully chronicled the decline of the system. The 109 B map of 1963 shows only (4) and (5) open, (3) and Coed Talon closed and the track from there to Brymbo taken up. The 1969 revision (B/*/*) records the singling of the east-west track and

the removal of the rails between Mold and Coed Talon. Now only one Hope remains and only one possible remote ambiguity. Some of North Western trains' timetables list (5) as Hope (Flintshire), but not all. Any intending Derbyshire passenger alighting there would however sense that something was amiss on catching sight of the new nameboard - Hope/Yr Hob.

Extract from Seventh Series Sheet 109, *Chester*, edition 4018, 1952, revised 1948-9



The Old Series at St John's

Roger Hellyer

One of the finest collections of Old Series maps one is ever likely to encounter is housed in the library at St John's College, Cambridge. There are in fact two collections, one a set of sheets electrotyped in the early 1860s, dissected and folded by Letts' into their distinctive green covers, which contains a remarkably high percentage of states, not recorded in Margary¹, priced at 2/- which predate the 1867 rise to 2/6. The other is a superb set of early flat sheets which, but for the constant recurrence of an unfortunate damp stain, are in virtually mint condition. For years these maps were stored in a wooden chest, but during the past few years this method of storage was abandoned in favour of a fine new metal map press.

No clue has yet emerged from the St John's archive as to whether they were purchased by the college, or by a benefactor who passed them over to the college. Either way, the sheets show few signs of use. It is as though they were purchased on subscription, thus in most cases received soon after first issue, and were immediately stored. Several of the quarter sheets are still gathered into the groups of four in which they were issued, held together by a ribbon tie, though whether this was added by the publisher, agent or owner is uncertain. What was certainly the work of the Ordnance Survey, or their agents, is the format in which the full sheets published up to 1820 were sold. As is well known, these 38 sheets were organised into "Parts" of the Ordnance Survey of Great Britain, a continuation of the traditional county map sets of Faden and other private map makers, though the link with publication in actual county groups was quickly loosened. Nine "parts" were issued to that date, and map sets offered for sale as complete parts were sewn into soft matt brown paper wrappers. A common title label was designed, with wording adapted as necessary for each part, and pasted to the front cover. Also on the label was an index fragment to show which one-inch sheets were inside. Copies of all nine parts, still in their wrappers, are in the St John's collection. The Lincolnshire set of eight sheets published in 1824 comprising "Part X" are also present, but, though each sheet is in its first state, no cover is present, and since they are without the pin holes caused by stitching, these sheets appear never to have been gathered.

So far as I know, no-one has yet published an opinion on precisely when these wrappers were in use. Reproductions of title labels appear in Margary², where they are noted as "contemporary". Drawing conclusions from a single sample is in general distinctly dangerous, but perhaps conclusions derived from the St John's collection, which is possibly a unique instance of all nine examples being present in a single collection, may be valid on that account. Nothing emerged from an examination of the wrappers themselves that suggested a terminus post quem, which leaves the states of the maps inside - also, of course, very difficult to date other than from internal evidence. The indications are that the wrappers were not applied to Old Series maps in their earliest years, starting in 1805 with the Essex set. The Devon (Part II, published 1809) and Cornwall (Part III, published 1813) sets in

¹ Harry Margary (ed.), *The Old Series Ordnance Survey maps of England and Wales* (Vols I-VIII), Lymington Castle, Harry Margary, 1975, 1977, 1981, 1986, 1987, 1992, 1989, 1991. With cartobibliographies and introductory essays contributed by J.B. Harley, A.Y. O'Donoghue (now Hodson), J.B. and B.A.D. Manterfield, R.R. Oliver.

² Margary I, xx; II, xxviii; III, xxxii.

particular were assembled from post state 1 issues, and furthermore lack the illuminated title sheets. Essex sheet 2 is also in state 2, so none of the illuminated titles are present. Several other sheets from Parts IV to VI with publication dates even as late as 1817 are also post state 1 issues. However the contents of the final three parts, VII, VIII and IX, published between 1817 and 1820, are all state 1 issues.

A tentative conclusion therefore is that the wrappers were not in use before the ban on the public issue of these maps during the dark years of the Napoleonic Wars in 1811. Publication resumed in 1816, and perhaps the wrappers were introduced at the same time or soon after, with the intention of encouraging sales of maps as county sets rather than as individual sheets. As to the *terminus ante quem*: what can be deduced from the St John's collection is that all the maps are in pre-1825 states, after which date piano key borders were added. All the full sheets present, other than the special case of sheet 10, only have a neat line for a border on two or more sides, and in one or two cases not even that!

St John's or their anonymous benefactor seems to have maintained the subscription until 1837, so the individual full sheets 7, 13, 34, 35, 36, 37, 41, 44 are all present, also the earliest of the quarter sheets: 42, 43, 45, 46, 49, 50, 51, 52, 53, 54, 55, 56, 57, 59, 60, 61, 62, 63, 73. For some reason quarter sheets 71 and 72 are lacking.

What turns this collection from being exciting to being of considerable historical significance are the quarters of sheets 43, 54, 55. Until two years ago it was generally accepted that these sheets were first issued with a border engraved on all sides. Then, as Richard Oliver pointed out³, having examined the copies on "India paper" in my collection, it was realised that these twelve sheets were in fact first issued with a piano key border engraved only on the outer two edges. Richard suggested that the probable reason why copies in this state had thus far escaped notice was that it had been common practice to assemble the quarter sheets into combined full sheets, with the consequent destruction of most of the inside margins. Thus, while some such sheets may indeed survive, they have not been recognised for what they are.

But these twelve sheets in St John's all survive flat with the paper complete to beyond the plate-mark, i.e. the line made by the edge of the copperplate, and, in the case of the sheet 54 quarters, the extent of the paper beyond that suggests that the original sheets of paper survive untrimmed. These are thus the first recorded flat issues of the seven not in my collection, and so far the only recorded copies of any of the twelve printed on mold-made watermarked paper.

OS policy on the origins of the move towards engraving future Old Series maps in quarter sheets is not, to my knowledge, documented⁴. The decision to do so was taken in about 1829, and the pace of production was thereby increased because it enabled four engravers to work simultaneously on the same sheet. The decision to limit the piano key border to the outer edges only of sheets 43, 54 and 55, the first sheets to be undertaken, was evidently an early one, and could even suggest that part of the original policy was that it would be expected that on publication the four quarters would be mounted together and sold in that form. To judge by the minuscule number of individual sheets recorded, this does in reality appear to be what occurred. It may not be coincidence that the quarter sheet numbers engraved on all sheets were in practice either covered or trimmed when the four quarters were united as a full sheet. The one sheet number guaranteed to survive was prominently

³ Richard Oliver, 'Cartographic discoveries', *Sheetlines* 49 (1997), 14-24, page 16.

⁴ Harley presents what evidence there is in Margary IV, xxviii-xxix.

displayed in the north-east corner of the north-east sheet, and that was a full, not a quarter, sheet number.

At some point, probably well into 1831, there seems to have been a change in policy, that the quarter sheets should after all be made available to the public as separate entities. It would be interesting to know what prompted this. The incomplete appearance of the border was in these circumstances distinctly embarrassing. The OS's solution appears to have been pragmatic: rather than delay publication of these twelve sheets while the engraving of the borders could be completed, the engraving of the marginalia, presumably mostly yet to be undertaken, should be so positioned that it would require no alteration once the finished borders were in place. Perhaps therefore very few copies were printed - probably no more copies than would be required for the few weeks or months it took to engrave the borders. In the meanwhile it is even possible that sheets of piano key border were again on sale so that purchasers of these sheets could, if they wished, "complete" the borders for themselves, and still leave important marginal information visible. I offer this as a completely unsubstantiated proposition.

Thus the twelve quarters of sheets 43, 54 and 55 were published in 1831-32 with marginalia which had a distinctly temporary appearance. On southern quarters, sheet numbers and prices, where present, were located twenty millimetres or more above the top neat line. And in the lower margins of the northern quarters, "The Writing by Ebenr Bourne" (on sheets 43NW, 54NW) and "...by Benjn Baker & Assistants" (on sheet 55NW) extends some fifteen millimetres beyond the eastern neat line on north-west sheets, and "Published at the Tower of London....." some fifteen millimetres beyond the western neat line on north-east sheets.

Illustration 1. The south-west corner of sheet 43NE, showing layout of marginalia (author's collection).



Published at the Tower of London 29th Sept. 1831. by Lieut. Colonel Colby of the Royal Engineers

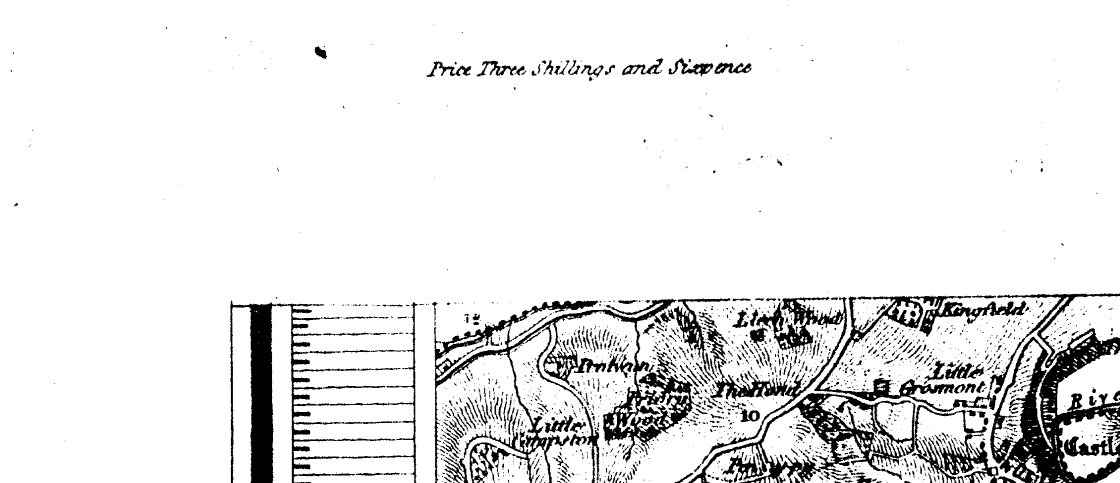
Furthermore this marginalia was printed some twenty millimetres below the neat line.

The sole exception was the Gardner imprint, situated on all north-west and north-east sheets about two millimetres from the neat line, suggesting that it may have been engraved prior to the change in policy. In four cases, when the border was completed all round, this remained in place and a recess was provided in the border to display it. These recesses sometimes remained in place for years, though empty once the Gardner imprint itself had been removed. In two cases, sheets 43NW and 55NE, the Gardner imprint was moved when

the border was completed, and appears beneath it. For some unaccountable reason the Gardner imprint is lacking on sheet 55SE.

One other detail is worthy of note, the sheet price. Sheet 54 quarters (published 7 May 1831) are unpriced: perhaps at this date no price had been determined for a quarter sheet. The quarters of sheet 43 (published 29 September 1831) are perhaps the only sheets in the history of the Old Series to be priced “Three Shillings and Sixpence”, this printed in each case at a place in the margins which would be removed or hidden when the quarter sheet was combined with its partners, but would survive when its own completed border was engraved.

Illustration 2. The north-west corner of sheet 43SW, showing location of sheet price (author's collection).



The fact that no such states exist is because late in 1831 a price adjustment was invoked for Old Series maps. Sheet 55 (published 11 February 1832) reflects this and is priced, outside the border, on the north east sheet only, at 12s 6d for the four quarters. Before long sheets 43NE and 54NE would also carry the same price statement, and it would be interesting to confirm, through a re-evaluation of the copies previously understood to be state 1, whether this price alteration was indeed made after the completion of the border, or at the same time.

The discovery of unrecorded copies of the twelve quarters of sheets 43, 54 and 55 necessitates a revision of the cartobibliographies as set out in Margary Volume IV, and I suggest the following as the probable sequence. All standard marginal information, as set out by Manterfield, remains accurate save the expression “Border all round”, which should be amended to “Border on the outer two edges only”. In the case of sheet 43, there was also a price statement, noted below. I have added details of the watermark and plate dimensions: these were measured from the copies of the maps in St John’s. Readers should be aware that because of paper distortion the actual copperplate dimensions would be slightly different. Copies previously thought to be state 1 need to be reassessed to establish whether any conform with the newly established parameters of state 1.

Postscript

The St John's collection is supplemented by state 1 of the ten-mile Index, still the only copy recorded. But that is another story⁵.

⁵ See Roger Hellyer, *The “ten-mile” maps of the Ordnance Surveys*, London, The Charles Close Society, 1992; with additions and corrections in *Sheetlines* 41 (1994), 42-50. An even earlier state with engraving of the topography only

I am most grateful to Yolande Hodson and Richard Oliver, both of whom took the time and trouble to read this article, and made several very helpful suggestions. But I would add that they are not responsible for the hypotheses contained therein, still less for any errors of fact.
Revised cartobibliography of the early states of the quarter sheets 43, 54, 55

Sheet 43NW

Standard marginal information

- i. Sheet number, 'N^o.XLIII.N.W. (Hereford)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London. 29th. Sept^r. 1831. By Lieut^t. Colonel Colby of the Royal Engineers.' bottom left, 21 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby by Benjⁿ. Baker & Assistants_The Writing by Eben^r. Bourne.' bottom right, 21 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on outer two edges only.

New State 1 (not in HM IV)

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl, and the price 'Price Three Shillings and Sixpence', top right, 15 anl. The Abergavenny and Hereford Rail Road is shown by means of two continuous parallel lines.

Cjc (T EDMONDS 1829; plate 512mm by 359mm, paper trimmed outside the plate mark);
 PC

Revision of the State 1 details in HM IV, xlii

- a. Border completed all round.
- b. Price deleted.
- c. Gardner imprint moved to 19 bnl.

BL Maps Ref.C7; RGS (two examples); BL OS (black label boxes); CUL Maps 34.01.43 (TEW 1829); LUL; BCL; (all m*); RGS (third example) (HMF); BOL C17(26).

State 2

Adjacent sheet numbers added.

BL Maps C9.a.2; BL Maps CC.1t; RUL; CUL Maps 34.01.43; PC; (all m*).

Unrecorded state (not in HM IV)

Gardner imprint deleted.

PC.

State 3, see HM IV, xlii.

Sheet 43NE

partially completed was subsequently located in Lincolnshire Archive Office by Richard Oliver in 1995. See 'A yet earlier ten-mile map', *Sheetlines* 42 (1995), 20.

Standard marginal information

- i. Sheet number, 'N^o.XLIII.' top right, 18 anl and 'N.E. (Hereford)' top left, 18 anl.
- ii. Imprint, 'Published at the Tower of London 29th. Sept^r. 1831. by Lieut^t. Colby of the Royal Engineers' bottom left, 21 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby by Benj. Baker & Assistants' bottom right, 21 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on two outer edges only.

New State 1 (not in HM IV)

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl, and the price 'Price Three Shillings and Sixpence' top left, 14 anl.

Cjc (T EDMONDS 1829; plate 511mm by 360mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, xliii

- a. Border completed all round, with Gardner imprint recessed.
- b. Price deleted.

BL Maps Ref.C7; RGS; CUL Maps 34.01.43; (all m*).

State 2 (HM IV, xliii), with 'Price 12^s.6^d. for the Four Quarter Plates' added top right, to right of sheet number, 18 anl.

Sheet 43SW

Standard marginal information

- i. Sheet number, 'N^o.XLIII.S.W. (Hereford)' top right, 18 anl.
- ii. Imprint, 'Published at the Tower of London. 29th. Sept^r. 1831 by Lieut^t. Colonel Colby of the Royal Engineers.' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby / by Benjⁿ. Baker & Assistants.' bottom left, 23 and 26 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 19 bnl, and the price 'Price Three Shillings and Sixpence' top left, 19 anl.

Cjc (T EDMONDS 1829; plate 511 mm by 359 mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, xliv

- a. Border completed all round.
- b. Price deleted.

BL Maps Ref. C7; BL OS (black label boxes); RGS (two examples); LUL; CUL Maps 34.01.43; BCL; LivU; (all m*); RGS (third example) (HMF); BOL C17(26).

State 2 (HM IV, xliv), with adjacent sheet numbers added.

Sheet 43SE

Standard marginal information

- i. Sheet number, 'N^o.XLIII.S.E. (Hereford)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London. 29th. Sept^r. 1831 by Lieut^t. Colonel Colby of the Royal Engineers' bottom right, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby / by Benjⁿ. Baker & Assistants_The Writing by Eben^r. Bourne.' bottom right, 23 and 26 bnl.
- iv. Scale bar, centre bottom, 26 bnl.
- v. Border on two outer edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, above scale 18 bnl, and the price 'Price Three Shillings and Sixpence' top left, 19 anl. A number of unnamed rail roads are shown in the Forest of Dean.

Cjc (NOT BLEACH^D. (*sic*); plate 513mm by 361mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, xliii

- a. Border completed all round.
- b. Price deleted.

BL Maps Ref.C7 (m*); RGS (m*); RGS (HMF); CUL Maps 34.01.43 (TE 1829) (m*); LUL (m*); LivU (m*).

State 2, see HM IV, xliii.

Sheet 54NW

Standard marginal information

- i. Sheet number, 'N^o.LIV.N.W. (Worcester)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London 7th May 1831, by Lieut^t. Colonel Colby of the Royal Engineers.' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby by Benjⁿ. Baker & Assistants._The Writing by Eben^r. Bourne.' bottom right, 20 bnl.
- iv. Scale bar, centre bottom, 26 bnl.
- v. Border on two outer edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl.

Cjc ([TEW]NB; plate 515mm by 362mm; paper 677mm by 506mm); PC.

Revision of the State 1 details in HM IV, lix

Border completed all round, with Gardner imprint recessed.

BL Maps Ref.C7; BL OS (black label boxes); CUL Maps 34.01.54 (two examples); RGS; LivU (all m*); RGS (second example) (HMF); BOL C17(26) ([TEW]NB); BCL (m*).

State 2 (HM IV, lix), with adjacent sheet numbers added.

Sheet 54NE

Standard marginal information

- i. Sheet number, 'N^o.LIV.' top right, 18 anl and 'N.E. (Worcester)' top left, 19 anl.
- ii. Imprint, 'Published at the Tower of London. 7th. May 1831, by Lieut^t. Colonel Colby of the Royal Engineers.' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby by Benjⁿ. Baker & Assistants._The Writing by Eben^r. Bourne.' bottom right, 20 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on two outer edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl.

Cjc ([TEW]NB; plate 517mm by 366mm; paper 680mm by 511mm); PC.

Revision of the State 1 details in HM IV, lix

Border completed all round, with Gardner imprint recessed.

BL Maps Ref.C7; RGS; CUL Maps 34.01.54 (two examples); LivU (all m*).

State 2 (HM IV, lix), with 'Price 12^s.6^d. for the Four Quarter Plates' added top right, to right of sheet number, 18 anl.

Sheet 54SW

Standard marginal information

- i. Sheet number, 'N^o.LIV.S.W. (Worcester)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London 7th. May 1831, by Lieut^t. Colonel Colby of the Royal Engineers.' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby. / by Benjⁿ. Baker & Assistants._The Writing by Eben^r. Bourne.' bottom left, 23 and 26 bnl.
- iv. Scale bar, centre bottom, 26 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, above scale, 19 bnl.

Cjc ([TEW]NB; plate 515mm by 363mm; paper 679mm by 509mm); PC.

Revision of the State 1 details in HM IV, lxi

Border completed all round.

BL Maps Ref.C7; CUL Maps 34.01.54 (two examples); RGS; BL OS (black label boxes); RUL; BCL; LivU (all m*); RGS (HMF); BOL C17(26) ([TEW]NB).

State 2 (HM IV, lxi), with adjacent sheet numbers added.

Sheet 54SE

Standard marginal information

- i. Sheet number, 'N^o.LIV.S.E. (Worcester)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London 7th. May 1831. by Lieut^t. Colonel Colby of the Royal Engineers.' bottom right, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby / by Benjⁿ. Baker & Assistants. _The Writing by Eben^r. Bourne.' bottom right, 23 and 26 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on two outer edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint as in Sheet 13, above scale, 19 bnl.

Cjc (TEW 1828; plate 517mm by 361mm; paper 679mm by 509mm); PC.

Revision of the State 1 details in HM IV, lx

Border completed all round.

BL Maps Ref.C7; CUL Maps 34.01.54 (two examples); BL OS (black label boxes); RGS; RUL; BCL;

LivU (all m*); RGS (HMF); BOL C17(26) (TE 1832).

State 2 (HM IV, lx), with adjacent sheet numbers added.

Sheet 55NW

Standard marginal information

- i. Sheet number, 'N^o.LV.N.W. (Loeminst^r)' (*sic*), top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London 11th. Feb^y. 1832 by Lieut^t. Colonel Colby of the Royal Engineers' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby by Benj. Baker & Assistants', bottom right, 20 bnl.
- iv. Scale bar, centre bottom, 26 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl.

Cjc (T EDMONDS 1832; plate 514mm by 362mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, lxii

Border completed all round, with Gardner imprint recessed.

BL Maps Ref.C7; CUL Maps 34.01.54; RGS; BL OS (black label boxes); BCL; LivU; PC; (all m*); RGS (HMF).

State 2 (HM IV, lxii), with adjacent sheet numbers added.

Sheet 55NE

Standard marginal information

- i. Sheet number, 'N^o.LV.' top right, 18 anl and 'N.E. (Leominster)' top left, 18 anl.
- ii. Imprint, 'Published at the Tower of London 11th. Feb^y. 1832. by Lieut^t. Colonel Colby of the Royal Engineers' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby. by Benjⁿ. Baker & Assistants' bottom right, 20 bnl.
- iv. Scale bar, centre bottom, 26 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, 2 bnl, and the price 'Price 12^s. 6^d. for the Four Quarter Plates' top right, to right of sheet number, 18 anl.

Cjc (NOT BLEACH^D. *(sic)*; plate 515mm by 362mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, lxii

- a. Border completed all round.
- b. Gardner imprint moved above the scale, 19 bnl.

BL Maps Ref.C7; BL OS (black label boxes); CUL Maps 34.01.55 (T.EDMONDS 1829); BCL; LivU; (all m*); RGS (HMF).

State 2 (HM IV, lxii), with adjacent sheet numbers added.

Sheet 55SW

Standard marginal information

- i. Sheet number, 'N^o.LV.S.W. (Leominster)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London 11th. Feb^y. 1832 by Lieut^t. Colonel Colby of the Royal Engineers' bottom left, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby. / by Benj. Baker & Assistants.' bottom left, 23 and 26 bnl.
- iv. Scale bar, centre bottom, 25 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below and by the presence of the Gardner imprint, as in Sheet 13, above scale, 19 bnl.

Cjc (NOT BLEACH^D. *(sic)*; plate 515mm by 362mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, lxiii

Border completed all round.

BL Maps Ref.C7; CUL Maps 34.01.55; BL OS (black label boxes); BCL; LivU; (all m*); RGS (HMF).

State 2 (HM IV, lxiii), with adjacent sheet numbers added.

Sheet 55SE

Standard marginal information

- i. Sheet number 'N^o.LV.S.E. (Leominster)' top right, 19 anl.
- ii. Imprint, 'Published at the Tower of London. 11th. February 1832. by Lieut^t. Colonel Colby of the Royal Engineers.' bottom right, 20 bnl.
- iii. 'Engraved at the Ordnance Map Office in the Tower under the direction of Lieut^t. Colonel Colby / by Benjⁿ. Baker & Assistants. _The Writing by Eben^r. Bourne.' bottom right, 23 and 26 bnl.
- iv. Scale bar, bottom centre, 20 bnl.
- v. Border on outer two edges only.

New State 1

The earliest state is defined by the absence of the changes noted below. There is no Gardner imprint.

Cjc (T EDMONDS 1832; plate 512mm by 360mm, paper trimmed outside the plate mark); PC.

Revision of the State 1 details in HM IV, lxiii

Border completed all round.

BL Maps Ref.C7; CUL Maps 34.01.55 (T.EDMONDS 1829), BL OS (black label boxes); BCL; LivU; (all m*); BOL C17(26) (HMF).

State 2 (HM IV, lxiii), with adjacent sheet numbers added.

The states of the St John's Old Series sheets

State 1

Sheets 1, 3, 4, 5, 6, 14, 15, 18, 19, 28, 36, 38, 39, 40, 42NW,SW,SE, 43NW,NE,SW,SE, 45NW,NE, SW,SE, 46NW,NE,SW,SE, 49NW,SW, 50NW,NE,SW,SE, 51NE,SW,SE, 52NW,NE,SW,SE, 53NW, NE,SW,SE, 54NW,NE,SW,SE, 55NW,NE,SW,SE, 56NW,SW,SE, 57NW,NE,SW,SE, 58, 59NW,NE, SE, 60NW,NE,SW,SE, 61NW, 62NE,SW,SE, 63NW,NE,SW,SE, 64, 65, 69, 70, 73NW,NE,SE, 83, 84, 85, 86

State 2

Sheets 2, 8, 9, 10, 13, 16, 17, 21, 22, 25, 26, 27, 34, 35, 37, 41, 42NE, 51NW, 56NE, 59SW, 61NE,SW,SE, 62NW, 73SW

State 3

Sheets 7, 11, 20, 23, 29, 30, 31, 32, 33, 44

State 4
Sheet 24

Unrecorded states

Sheet 12 new state between 3 and 4 - scale bar added (the remaining state 4 changes do not apply)

Sheet 43NW,NE,SW,SE new state 1 - see above

Sheet 46NW new state ?1 - the words "The Hills by J. Caplin" are lacking

Sheet 46NE new state ?1 - the words "The Hills by A. Baker" are lacking

Sheet 47 new state between 1 and 2 - as HM I state 2, but lacking scale bar

Sheet 48 new state between 1 and 2 - as HM I state 2, but lacking scale bar

Sheet 54NW,NE,SW,SE new state 1 - see above

Sheet 55NW,NE,SW,SE new state 1 - see above

Level Crossings and Sidings

John Cole

I have a marked preference for the red 'X' symbol representing level crossings on the Fifth Edition and New Popular one inch maps, as opposed to the depiction on the Popular or the Seventh Series or even the annotation 'LC' on the 1:50,000.

Whilst usage on the fifty maps derived from Fifth Edition material appears consistent (except perhaps in the case of sidings or tramways e.g. sheets 179 and 187) several procedures are apparent on the Provisional New Populars.

On the following sheets the 'X' symbol is applied to A and B class roads only. Crossings on narrow motor roads (good) are as per the Popular Edition and there is no warning of this on the legends: 64, 75, 77, 78, 84, 85, 91, 92, 93, 94, 96, 97, 98, 100, 101, 105, 111, 112, 113, 114, 121, 122, 124, 125, 130 and 131.

On the following sheets all crossings on coloured roads are shown by an 'X': 83, 88, 89, 108, 115, 116, 117, 118, 127, 128, 129, 138, 140, 141, 142, 151, 152 and 153.

In the following instances it is thought that the intention was to show all level crossings but the bracketed major road has been missed: 95 (B6248), 102/103 (B6086), 104 (B1207), 120 (A38) and 123 (B1165 and B1357). And similarly minor coloured road crossings are not shown by an 'X' on : 86, 90, 99, 106 and 107 (which also possibly lacks a level crossing on the A496). Sheet 99 deserves special mention as it contains no less than 51 level crossings just three of which are not represented by the symbol.

The following sheets are inconsistent in that (generally) the symbol is applied to some, but not all, minor coloured roads: 76, 82, 109, 110 and 154. In the last case this seems to apply only to the northern half of the map where depiction is very difficult. At least one level crossing is missed at Tredegar (A4048). The odd map out appears to be 126. In this

instance no 'X' appears on the legend and crossings are as per the Popular. My example is a 1946 printing and apparently the 1945 and 1952 printings are similar.

Treatment of mineral railway and tramway crossings appears in the main to follow the A and B road policy. However on sheet 78 at least three 'X's appear on coloured minor roads. And on sheet 120 they are not applied to any roads in Barton and Swadlincote but are to be found in the Cannock coal mining area. An amusing mistake appears in square 0206 where the symbol which should apply to the B4154 has been misplaced on to the adjoining canal.

Also on the New Populars of Fifth Edition parentage, the legend indicates narrow gauge railways by a 'ladder' symbol, and sidings and tramways by a single-line-with-bars. However on sheet 185 (grid references 0167, 0168) the standard gauge Ruthernbridge freight only branch is shown as a ladder; as are the Looe Quay line (2553) and the truncated remains of the Looe and Caradon Railway (2363, 2364) sheet 186; the sidings at Laira (5055), Friary (4854), the dockyard railway (4456, 4455) and the freight-only branches to Sutton Harbour and the Cattewater (4953, 4954) all on sheet 187, the Meldon Quarry sidings sheet 175 (5692), and the Totnes Quay branch (8060) sheet 188. On sheet 163 the sidings at Barnstaple Junction (5532) are represented as single line railway, but at Peters Marland (5012) the standard gauge sidling into the clay works is shown as a latter whilst the extensive three foot gauge system of the North Devon Clay Company is single-line-with-bars. To add to this sort of confusion, the eight and a half mile long Lee Moor Tramway and the seven and a half mile Redlake railway are both shown on sheet 187 as tramways when in fact they were steam operated narrow gauge lines at four feet six inches and three feet respectively. (Though the Lee Moor tramway used horse traction at its western end.)

Some time ago I taxed Richard Oliver with the narrow gauge/siding and tramway issue and was given the following explanation: In about 1933 there was a change of convention on the One-inch Fifth Edition. The early sheets had shown sidings by the ladder symbol but the change decreed that in future the ladder symbol was to be used for narrow gauge and the single-line-with-bars for standard gauge sidings as well as for tramways. Unfortunately sheets drawn pre-1933 were usually left as they were though the legends were changed, and this was done anyway, when the Fifth Edition material was rearranged for the New Popular.

The first National Grid map?

Roger Hellyer

It is by now well-known that a new national grid was introduced to British civilian mapping in the 1930s¹. Not that it was the first. The horizontal and vertical lines set two inches apart

¹ Much the best discussion on the development of the yard grid is to be found in Richard Oliver, 'The evolution of the Ordnance Survey National Grid', *Sheetlines* 43 (1995), 25-46.

on the previous generation of maps were, as Brian Adams has demonstrated², in fact co-ordinate lines of an unspoken national grid. These had actual if unrevealed real values in that they measured distances on maps constructed on the Cassini Projection from the origin of that projection at Delamere in Cheshire. But while the Ordnance Survey may have used them as such for constructional purposes, they were of no practical use to the user as a national system since their values as calculated from the origin were never displayed on a map. Each sheet displayed instead a system uniquely measured to itself, numerically from “1” west to east and alphabetically from “A” north to south. The military also had its own national grid. A national system of gridding which offered unique co-ordinate values for any point in Great Britain measured east and north from an origin south-west of the Isles of Scilly had been developed and applied to military maps in the War Office Cassini Grid, but this never was and never would be intended for civilian use³.

Thus a similar national system, for civilians, was something wholly new. This new grid, to be measured in yards, was first applied to the One-inch Fifth Edition, introduced in 1931. It was followed in 1932 by the first of several ten-mile maps, and in 1934 by the Quarter-inch Fourth Edition, first in England and Wales, then Scotland. There would be in addition several special maps at scales ranging from the quarter-inch to the three-inch⁴.

What may not be so widely realised is that without exception all these new maps stubbornly refuse to offer a name to the grid lying across them, though of course offer instructions as to how to use it. “The map is covered with a grid”, announces the first sheet of all (One-inch Fifth (Relief) Edition Sheet 144) in these instructions, which do not stipulate how far apart the grid lines actually were. By 1933 on the two-inch map of the Isles of Scilly this had been clarified as “Co-ordinate lines 5,000 yards apart, East and North of the origin, are printed and numbered on the map”. And it had needed clarification, because the instructions offered between the bald statement of 1931 and the 1933 version, as it appeared on Sheets 137, 145 and the two *Aldershot* maps, not to mention the new ten-mile Road Map of 1932, must have made potential users despair - after all they had never before been confronted with anything more complex than simple alpha-numeric squares.

The position of a point on a map of this series may be defined by the co-ordinates in yards East and North of a datum which lies in the SW of England. The datum is not the true origin, but is removed 1,000,000 yards West and 1,000,000 yards South of that origin in order that all signs may be positive. Maps on this scale are covered with grid lines 5,000 yards apart. The distances of the lines East or North are given on the sheet edge. By measuring or estimating the distance of a point from the grid lines West and South of the point and adding these distances to the grid line values obtained from the sheets edges, the full co-ordinate of the point can be obtained.

The *Descriptions of the Ordnance Survey Small Scale Maps*, of course, allude to the new grid, though the Seventh Edition of 1930 was just too early to mention it. The Eighth Edition has “...in order to meet modern requirements for accuracy, the two mile squares are being replaced by a grid of 5,000 yard sides..... The advantages of the adoption of this

² Brian Adams, ‘198 years and 153 meridians, 152 defunct’, *Sheetlines* 25 (1989), 3-7; also his Foreword to Roger Hellyer *Ordnance Survey Small-scale Maps. Indexes : 1801-1998*, Kerry, David Archer, 1999.

³ Roger Hellyer, ‘Some notes on the origin of the Modified British system of the War Office Cassini Grid’, *Sheetlines* 55 (1999), pp 3-11.

⁴ Richard Oliver provided an almost complete list in *Sheetlines* 43 (1995), 46. *Scotland in Roman Times*, 1940, should be added.

simple universal system of reference for the National Maps will be obvious to all map users, as in future the same reference figures will apply to all new small-scale maps". Still no name, but at least the word *National* has entered the frame. Where else therefore should we look? Though he described its principles in some depth in the pages of his popular 1936 book *A Key to Maps*, Winterbotham⁵ could still offer the grid no name. Viscount Davidson⁶, while recommending that a national metric grid be applied to OS maps both large and small-scale, almost completely ignored the existence of the yard grid of the 1930s in his exposition of the *status quo*, referring only in passing to the grid lines spaced "at 5,000 yards as has been done on the Fifth Edition of the one-inch maps". If the major public inquiry of its decade into the national mapping organisation can dismiss in one casual phrase so fundamental a part of its new mapping programme, one can only assume the decision had been taken already to drop it.

In fact the earliest known name so far recorded for the yard grid comes from another 1938 source, by which time the grid was already obsolescent. Inside the cover of the *New Forest Tourist Map* we find "The squares on this map form part of the National Survey Grid"⁷. This map is itself prime evidence of this obsolescence in that it is constructed on National [metric] Grid co-ordinates, and doubtless ready for conversion to the new grid the moment it became active. Note that any instructions as to the use of the yard grid were relegated to the map cover; no room would be sacrificed for them in the margins of the map itself. But this seems to have been a wholly isolated instance. The name *National Survey Grid* lived and died in this one appearance, after which all reference to it was dropped.

It was with considerable surprise, therefore, that I recently came across in the Map Room of the Royal Geographical Society a copy of the 1904 (revised 1927) *Map of Great Britain and Ireland* at the scale of 1:1 million, with an overprinted title *The Transverse Mercator National Grid (Origin Lat: 49°N Long: 2°W)*. What appears is nothing other than the yard grid, overprinted in red across both sheets of the map at 50,000 yard intervals, having been calculated to the very north of the Shetland Islands. Coverage of Ireland was properly omitted. Other than the printed publication date of the base map, 1927, the map is unfortunately undated, but there can be little doubt that it was created for use at a conference held at the Royal Geographical Society on 10 April 1933 to discuss the use and merits of the new grid. The conference was written up by Brigadier Winterbotham⁸, and indeed there is accompanying his paper a poor quality photograph of part of the 1:1 million map, with the caption "The National Grid overprinted on a portion....of the 1/M outline of Great Britain". The map was presumably left at the Royal Geographical Society at the end of the conference, and has resided in the Map Room ever since. There is no record of another copy.

Here significantly is almost certainly the first use of the expression *National Grid* on a British map, made no later than 1933. The wonder is that the expression should be used here, yet be so completely absent from all other maps bearing the grid, or apparently anything that was written about them at the time. But it was an expression popular that afternoon. Winterbotham's preamble to the discussion made constant use of it, both

⁵ Brigadier H.St.J.L. Winterbotham, *A Key to Maps*, London, Blackie & Son, 1936, 127ff.

⁶ Viscount Davidson, *Final Report of the Departmental Committee on the Ordnance Survey*, London, HMSO, 1938, 4.

⁷ This legend was illustrated in *Sheetlines* 43 (1995), 39.

⁸ Brigadier H.St.J.L. Winterbotham, 'The use of the new grid on Ordnance Survey maps', *Geographical Journal* 82 (1933), 42-54.

descriptively and as a name, though upper case letters were never used, even claiming at one point that “The national grid as now in use is the highest form of reference so far evolved”. It is hard to envisage how one of the officers responsible for the development of the Modified British System of the War Office Cassini Grid could have been so passionately misguided. In his current role as Director General of the Ordnance Survey he undoubtedly had a vested interest in publicising the new grid, and indeed later in popularising it through his book. And, as Richard Oliver pointed out⁹, the grid seems to have been above all Winterbotham’s own conception. There can therefore be little doubt that his belief in the practicality of the grid was genuine. One wonders how often he used it.

Book Reviews

Ordnance Survey small-scale maps Indexes : 1801-1998. England & Wales : Ireland : Scotland. By Roger Hellyer with a foreword by Brian Adams. 264 & xxiv pp. Published by David Archer, The Pentre, Kerry, Newtown, Montgomeryshire, SY16 4PD; 1999. Price £35 hardback. 303 mm. ISBN 0 9517579 54

If anyone should wonder why I chose the name ‘Sheetlines’ for the journal of the Charles Close Society, let them study this book. Anyone who eavesdrops on a typical CCS conversation could be forgiven for thinking that it was conducted in some sort of secret code comprising numbers and placenames. We all tend to visualise the British Isles in terms of the identification of the rectangles that, for the collector, at least, make up the sheets of the series that currently forms the object of desire. Some gifted CCS members have a mental image of the coincidence of the sheet lines of several different series, and can move from one to the other, citing a succession of numbers and names from memory. Those of us who lack this facility (and I am one) will be relieved to have the hard work done for them, for all is revealed in the cornucopia of indexes that form part of the substance of this volume.

I well remember that one of the very first ideas, in 1980, for a publication that would be irresistible to all CCS members was for a book of indexes to the OS one-inch series. For librarians and map collectors, such a reference work would, it was thought, be indispensable. That was nearly twenty years ago. We had an inkling that what OS claimed to have published did not always match what was actually printed; and that much was issued without being mentioned in official sources. For those of us who curated and collected OS material the boundaries of our knowledge were woefully limited. An exception should be made though in Richard Oliver’s case, for in the early 1980s he compiled a number of most useful indexes, complete with dates, to various editions of the New Series of the OS one-inch map. These were never published, but some of this work has been incorporated into the volume under review.

It may be thought that it would have been enough just to have produced a book of indexes - the difficulty in finding suitable originals for reproduction is no easy matter. Much time and care has been taken in searching out suitable source materials, and, where a useable original has failed to materialise, David Archer has produced very clear new diagrams.

⁹ Richard Oliver, *Sheetlines* 43 (1995), 36.

On their own, these indexes are absolutely invaluable, but here, they have been adorned by an astonishingly comprehensive text which explains in such readable fashion how sheet lines come to be selected and constructed - this is, of course, no more than we have come to expect from Brian Adams, who has contributed the erudite foreword. Furthermore, we are treated to an amazing *tour de force* by Roger Hellyer in his listing of the 133 OS and War Office series of Great Britain (in whole or in part), ranging in scale from 1:50,000 to 1:4,000,000. Each sheet of each series known to have been published is listed together with the different versions) and district maps are also listed. In doing all this he has also provided a valuable synopsis of the publication history of the maps.

Finally, before I wander off into further superlatives, a word on the physical production of this book. Camera ready copy was provided by Roger Hellyer. Authors who have also become their own typesetters, so to speak, will know that it often takes longer to arrange and set the text satisfactorily on the page than it does to write the intellectual content of the book. There is constant fiddling with font size, and re-writing just so that everything fits perfectly into the designated space. Dr Hellyer and David Archer have achieved an excellent balance in the design of the page layout and in the arrangement of the book, to which they have clearly given much thought. The end product is a reference work that is easy to use and, in its attractive laminated hard cover, gladdens the eye on the library shelf. This is one of those occasions where it can truly be said that no map librarian, CCS member, or map collector can be without this book.

Yo Hodson

Artillery's Astrologers A history of British survey and mapping in the Western Front 1914 - 1918. By Peter Chasseaud. 558 & xviii pp.; 19 figs & 22 half-tone photos. Published by MAPBOOKS, 17 St. Anne's Crescent, Lewes, E. Sussex, BN7 1SB. Price £50. ISBN 0-9512080-2-0.

It was a great pity that the many members of the Society who were present for Peter's address to the AGM in May about the scope of this book were not able on that occasion to see and purchase copies of this magnificent work due to a production delay. Many of us have been aware of the increasing tempo of his researches over the past twenty years, starting with his study of the 1:10,000 scale series of British trench maps (GSGS 3062), and continuing with the atlas *Topography of Armageddon* which forms an essential companion to this book.

In his introduction the author reveals how what started out as a project for an article is now placed before us, 'with all imperfections', in the hope that it may provide a network of more-or-less fixed points which can be filled in and revised by others. It should be noted that in this work of over 700,000 words it is inevitable one can find very occasional conflict of facts, and some interpretations of the evidence will face re-examination, but at least what is there is well documented as to source. The great density of detail he has provided is set into a chronological, not thematic, framework, so that readers can better relate the creation and use of maps to operations, even though this generates some repetition. His intention is not to create a carto-bibliography, which in itself would fill another book. He has therefore excluded the interesting, but essentially ephemeral, items generated on low-grade duplicators during operations, along with the category of used sheets carrying manuscript

additions by temporary owners which figure so largely in the former Official Historians collection in PRO class WO 153, and also in a few other classes.

One of the greatest problems relating to any study of British military survey activities in both the World Wars is that decisions were made about the level of military organisational decision-making which would be of interest to future historians. After the Great War the cut-off point for record preservation appears to have been in general at battalion level. Since Military Survey has almost always operated as dispersed smaller units, few systematically organised collections of unit files and local orders have survived, so that as Peter Chasseaud points out, it has taken him years gathering and reassembling fragmentary information found in numerous PRO classes and elsewhere to build up what is still a jigsaw with many pieces missing. He notes in particular the lack of information about a number of officers involved, although he has done extremely well in uncovering a number of personal archives, and regrets that he started so late in his hunt that he never met any of the survivors, even one such as T. C. Nicholas, who died in 1989 at the age of 101. Nevertheless, his account is rich enough in personalities to justify the title of a lecture I gave some years ago at a PRO Symposium 'History is about chaps, Geography is about maps, War is about chaps with maps'. Having spent four years as a Gunner, and forty years with Sappers in Military Survey, I was personally delighted in his close linking of the two corps. In old Russian literature, Ordnance Survey was translated as 'Artillery Survey', and as late as 1935 Colonel Boulnois, Chief, GSGS complained (PRO WO 181/271, 30.8.35) that though he had 83 Survey-qualified R.E. officers, the only survey work going on, along the international boundary of British Guiana, was being done by two Gunner officers.

The packing of so many words into a single volume has resulted in a somewhat unwieldy book. It is quite heavy, but apparently strongly bound, and enjoys being revealed on a lectern, rather than juggled on a lap. The pages of text contain great slabs of print in about sixty lines of twenty words, with narrow gutters and margins, but it is very clear, with even the smallest letters clean. As an example of what an individual can send to the printer as laser-printed camera-ready copy, this work should give encouragement to authors with an urge to self-publish. Above all, its content justifies the author's devotion, and merits the support of all who are interested in the ramifications of OS activities. Although it will, like his atlas, eventually be available in good bookshops, early delivery can be ensured by ordering direct from the publisher.

Ian Mumford

Ordnance Survey 2000 Motoring Atlas: Britain; Published 1999, Ordnance Survey, Southampton. ISBN 0-540-07692-9.

This is a brief review of early my early impressions of the new Motoring Atlas. Firstly in terms of information content it cannot be faulted. It has a directory of events (from the British Tourist Authority) from August 1999 to December 2000; complete directories of the properties of the National Trust, National Trust for Scotland, English Heritage and Historic Scotland. It also has a list of the Royal Horticultural Society's gardens and the Historic Royal Palaces. Indeed, on the rear cover of the atlas it claims to have 'More tourist information than any other atlas', a claim it would be hard to refute. Almost all that these items appeared in the 1999 edition. What did not is the list of Millennium Projects. This is a list of over 80 of the largest of the 200 projects over 3,000 sites across the country. The

information is supplied by the Millennium Commission. The list is divided regionally and is colour coded to a small UK map at the start of each section. In fact this colour coded regional key map is used for each set of information. One area of information that is significantly better than last year is the Boundary Information, National and Forest Parks and Long Distance Paths map. Last year this was all pulled together onto one map, which was also marked with an index of the pages in the atlas, and the result was rather cluttered. This year the index is left to the back cover. On the inside back cover half the page has an advertisement for the OS Street Atlases (including colour editions for Essex and a new atlas for Northamptonshire, due in October 1999 while the other half has Boundary Information clearly laid out with insets for the urban areas. Opposite this page is a page entitled Scenic areas, cycling and walking, which shows existing and planned cycle routes (from Sustrans, including the route number) with long distance paths and the National and Forest Parks and areas of outstanding natural beauty.

Now the mapping itself. The atlas contains the usual route planning maps and the same selection of town plans as last year. The tourist information is much the same as last year. It almost goes without saying that in this millennial edition the atlas the Greenwich Meridian is shown, by a rather thick green line, which although it does not obscure detail, would have perhaps looked neater if it had been thinner as on the Explorer maps (though that is heavier and can sometimes obscure detail). Generally is clear though there would seem to be some quite serious problems in places. There are numerous examples of the colour for roads not being within the lines along the edges of the roads. Good examples (perhaps that should be bad examples) include the A66 between Temple Sowerby and Keswick and near Brough, the A685 between Brough and Kendal, most main roads around Skipton, et cetera. In fact there are many examples, and I fear that this could well cause impartial purchasers to go to the AA's atlas, which lives up to its boast of having been voted Britain's clearest mapping.

Overall the OS offering has masses of useful information which is clearly list and shown on the maps, which are let down by what would appear to be poor finishing.

Jon Risby

Letters

Railway error at Warrington

The more I look at the map extracts (*Sheetlines* 54) the less convinced I am that this was a 'ground' error. The Old Series one-inch map contains more than a few positional mistakes where railways were added and most (but certainly not all) can be traced to sparse and unreliable original detail. In the case Richard Dean brings to light, a trace proves the detail to be reliable and because it is anything but sparse, the railway could have been added by the very simple method of pacing from points existing detail. There is something decidedly suspicious about the road alteration north west of Sankey Green on the 1873 map, and the positioning north at Whittle Green rather than a quarter of a mile to the south is virtually an 'impossible error' to make in the field.

Examples of railway errors were noted in *Sheetlines* 25 (8/89) 32 (1/92) and 42 (4/95) though the OS is slightly exonerated in the last instance by annotating 'Railway Unfinished'! In *Sheetlines* 25 the late Guy Messenger highlighted a very strange instance on Old Series sheet 31 whereby a junction had been effected by lines of differing gauge. He concluded by noting that it was 'useless to speculate on how such mistakes arose', but again the incorrect depiction is so bizarre that it is difficult to comprehend how such could have been arrived at when the actual level crossing of the lines was uncomplicated.

Upon reading Richard's article I re-examined my own small collection of reprints of the Old Series and sure enough some clear mistakes plus several suspected instances were apparent. An example of unreliable original detail possibly explains a very poor alignment north and south of Morthoe station on Old Series 27, but it certainly does not in the case of an outrageous hairpin bend (instead of following the contour) on the Bodmin branch (Old Series 30). Other mistakes actual or suspected were found on sheets 7, 13, 24, 62 and 88 though it must be stressed that all are minor compared with Warrington.

Sheetlines 42 (as has been mentioned elsewhere) contains a reprint of 'Instructions for insertion of railways &c for one-inch map (with reference to DG's circulars of 7th November 1879 and 20th July 1886).' dated October 1897. It would be very interesting to see the circulars mentioned or indeed any earlier instructions on railway revision.

John Cole

Map of Salisbury

I recently bought an OS map, entitled *Salisbury*, with the following details:

Surveyed in 1868-86

Revised 1893

Published 1895

Boundaries revised to December 1898

Railways inserted to August 1897.

There are a couple of intriguing points about it that I cannot understand and I enclose two extracts for your perusal.

The first point is the bottom and right hand margin. They have been overlaid with great precision as can be seen on the copies. However the Edward Stanford sticker was stuck on afterwards. Also the map has been patched also with great precision on certain areas of the map as can be seen by the different ways of representing the wooded areas of The New Forest, etc. Why is this?

The other point is the range rings radiating exactly from Breamore House. There are twelve of them exactly one mile apart. The original colour is purple with the 6 and 12 mile rings enhanced by light hachuring on the inside of the rings. On close inspection the range rings were drawn after the patches were made.

I have no idea why these alterations were made - perhaps the residents of Breamore House asked for this to be done by the OS. I would be most interested if any of our learned members can cast any light on this.

Hugh Brookes

The Centre Tree (1)

At first sight it seemed easy - a postcard captioned 'The Centre Tree' (*Sheetlines* 53), and the comprehensive OS *Gazetteer of Great Britain* with an entry for it. However, checking the reference (SK 6067) on the 1:50,000 sheet 120 produced a location in the Broad Drive of Sherwood Forest about a mile west of the well-known Major Oak. The caption on the postcard says 'Morton' and, while there are two places of this name in Nottinghamshire, neither is near enough to claim this tree.

Another claimant, although one wonders why, is the Round Tree or Midland Oak at the junction of Lillington Avenue and Lillington Road in Leamington. Charles Close, in his paper on 'The centres of England and Wales' in the *Geographical Journal* in 1941 (reprinted in *Sheetlines* 36) mentions a postcard of this one, and an article in *The Times* on 12 September 1923 describes the tree. Inevitably, *Times* readers being what they are, it was followed by four letters making different claims. Another list of supposed centres appeared in *The Observer* in 1927 (reprinted in *Notes & queries* vol.153 p.246).

Close's system of cutting out a cardboard outline of England, mentioned in *Sheetlines* 53 as having been found in a School Certificate textbook of 1929, was anticipated in 1923 by a headmaster who got his students to work with their scissors; they came up with a point 8 miles NW of Meriden Cross (itself one of the most-quoted 'centres'). The OS had a further go at cardboard cutouts in 1971, but for Great Britain rather than England, coming up this time with Stonyhurst near Clitheroe in Lancashire. Later, in 1988, they used digital technology and moved the centre 4 miles SE to 'a short distance west of Calderstones Hospital' (SD 676424). John Leonard of the OS, writing in *The Times* of 4 December 1991, says that they enjoy these 'occasional forays as the unqualified in full pursuit of the unmeasurable. But then, if OS is not qualified, perhaps no one is'. This still leaves us with the Centre Tree in Morton. Perhaps it is the centre of something else. A county, maybe, or an estate. Should we be looking at all the Mortons, in Cumberland, Derbyshire, Durham, Gloucestershire, Lincolnshire (3), Norfolk, Northants, Nottinghamshire (2), Shropshire, Warwickshire, Yorkshire (2), the Isle of Wight, and one in Wales and several in Scotland? On the other hand, since the publishers of the postcard couldn't even spell Ordnance Survey correctly, perhaps they got Morton wrong as well.

Charles Toase

The Centre Tree (2)

Regarding The Centre Tree postcard in *Sheetlines* 54 (December 1998). The photo shows Stretton Road, Morton, Chesterfield, Derbyshire, SK 405604, looking west north west. The stump of tree still exists on the north side of road.

John West



New Touring map of Scotland – another change of style?

Jon Risby

Just as I complete this edition of Sheetlines the B edition of Touring map 12, Scotland has been published. At first I walked past it in Stanfords, because it does not have the familiar dark red of other tourist maps. Instead the front and top spine have a large photograph (of Glen Etive) with two smaller inset photographs. The title is in a box in the front centre top which is bright red with a pink band across it. With a new edition of the Peak District touring map is due shortly; it will be interesting to see what cover that has.

The mysterious case of the Redbourne by-pass

R C Wheeler

For some 20 miles north of Lincoln, the Ermine Street is bereft of villages. That was no doubt the reason for the foundation of a hostel for travellers at Spital-in-the-Street, although this was later re-founded as normal almshouses and its endowment was largely diverted to educational purposes in the 1858. The turnpike road eased the problems of travellers by diverting to the east a little beyond Spital, taking travellers through the village of Redbourne, which still possesses a very serviceable inn.

As traffic increased in recent years, the inhabitants of Redbourne must often have regretted the moving of the road and longed for a by-pass, so, on opening OS quarter-inch 5th Series, Sheet 11 (C/*/*/*/*) of 1972, they will have been gratified to see a new by-pass running to the east of their village. Unfortunately, traffic continued to roar along the main street, not least because there was absolutely no sign of this new by-pass on the ground!

Nor did the by-pass appear on the 1:50 000 map, although it remained on successive states of the quarter-inch, its last known appearance being on the Ordnance Survey National Atlas of Great Britain (OS/Country Life, 1986) its disappearance roughly coincided¹ with the A15 being switched back to the ancient route along Ermine Street, as a result of which the road through Redbourne was down-graded to a (very quiet) B-road².

This remarkable error with its 14-year life could perhaps have escaped widespread notice nowhere else in the country. I would hesitate to speculate on how it occurred. However, I find it amusing, when encountering non-OS road atlases of that era, to investigate whether they too show the Redbourne Bypass. Perhaps the OS Copyright department found it useful for the same reasons.

¹ The new route is shown as 'under construction' on Sheet 112 (B) of the 1:50,000, dated 1989.

² I am grateful to a beneficiary of the Spital endowment for examining his collection to establish the exact life of the Redbourne bypass.