



Sheetlines

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

Episodes in the history of the Ordnance Survey 1:25,000 map family

by Richard Oliver

For a map series which, as far as the map-buying public is concerned, is less than fifty years old, the Ordnance Survey 1:25,000 has had an unusually chequered history and pre-history. With the completion of the publication of the Second Series (*Pathfinders*) in December 1989 it might have been thought that these maps would be suffered to lead a quiet existence for the next few years, but in the twelve months preceding the writing of this piece, there have been three interesting developments: the publication of a new 'large sheet' *Pathfinder* (1126, *Gower*); the rumour that 'uneconomic' areas may no longer be mapped at this scale; and the development of a joint Ordnance Survey / Hydrographic Department 'Coastal Zone Series', of which the prototype sheet is at 1:25,000. Of these, comment on the last is constrained by its still being in the development stage, and this writer commented on the first at some length a few months ago, though its most profound aspect, that of sheet size, is an important theme in the 1:25,000 story, and, in this writer's view, has an important bearing on the second: the marginal economy of this mapping.

From the misty ages: military origins

Although the 1:25,000 scale was only adopted as an official scale for Great Britain *circa* 1930-31, mapping at broadly related scales had been produced for military purposes for as long as parts of Britain had been subject to official mapping of extensive tracts of land. The military survey of Scotland of 1747-55 was at a scale of 1 inch to 1000 yards (1:36,000), and, after limited areas had been surveyed at the six-inch scale (1:10,560), the military survey of Great Britain begun in earnest in 1795 was made first at three inches to one mile (1:21,120) and then at two inches to one mile (1:31,680). These surveys were originally made for military use rather than for general publication, and even after 1815, when the military justification was removed and they were intended purely to provide a basis for a one-inch (1:63,360) map, surveying at the two-inch scale was retained, and the two-inch drawings often contain minor names and other details which do not appear on the published one-inch maps. Surveying at the two-inch scale was abandoned in favour of the six-inch in 1840, but later in the century a number of maps at the two-inch and three-inch scales were produced of areas of particular military interest. The majority of these appear to have been obtained by direct photo-enlargement of one-inch material, with some additions. For example, the two sheet two-inch map of the Aldershot area of 1890 has several additional names and shows relief by form-lines (in brown) as well as by contours and spot-heights. The two-inch Cannock Chase manoeuvre map of 1894, also enlarged from one-inch material (but this time derived from a zincographed rather than an engraved original), has hill-shading and is the first OS map known to the writer on which appear the now familiar symbols for churches with towers and spires. Several other two-inch manoeuvre maps were produced at this time, but in the nature of things they were ephemeral, rather than contributions to what today would be called 'core mapping'.

The new church symbols were the outcome of a War Office Committee on the Military Map of the United Kingdom which had sat in April 1892. The most tangible outcome of this committee's deliberations was the redesign of the New Series one-inch map, but the evidence given indicated some military desire for mapping at a scale or scales intermediate between one-inch and six-inch, possibly nationally, but possibly of more limited areas: either the south-east of England or the

vicinity of important military centres.¹ In the 1890s, when the authorisation of cyclic revision of OS mapping was offset by the withdrawal of state support for mapping at scales larger than 1:2500, any significant extension of official mapping was unlikely. Indeed, when in 1902 a new scale was introduced, and at military behest, it was the half-inch (1:126,720). The South African War had proved a chastening experience for the British military, and maps were not excluded.

In 1910 the balance of military interest was once more moving towards a scale or scales intermediate between one-inch and six-inch.² The result was the mapping of a large part of eastern England at a just such a scale.

The 'Map of East Anglia', (or Suffolk and adjoining parts) 1914 (or 1911?)

The hitherto rather exiguous references in print to this map give the date as '1914',³ or 'during the war',⁴ (though there is a solitary unpublished secondary reference to '1913-14')⁵, and say or imply that it was overtly defensive in its nature, but although this may be justified by the printing or publication dates on surviving copies,⁶ it is more questionable in the light of two other points. First, the early sheets contained much information not found on standard civil OS mapping, such as watering places for men, horses and traction engines, the construction of bridges and the suitability of church towers and hill-tops as observation points. It has been suggested⁷ that these are far more characteristic of manoeuvre mapping than of mapping hastily produced for counter-invasion purposes. The second point is more revealing and, for this writer, disposes of the idea that the *Map of East Anglia* was a 'war map'. Sheet 85 N.E., though claiming to be printed in 1914, has magnetic information dated 1911. It is suggested that the *Map of East Anglia* was initially prepared in 1910-11 for use in conjunction with the 1911 manoeuvres, which were cancelled, allegedly because of international tensions, but in fact so that, if necessary, the military could give aid to the civil power during a notoriously strike-ridden summer;⁸ and that the sheets were printed in 1914 because the reproduction materials were available, rather than because of strict military considerations. One has only to study the sheet lines (36 sheets, laid out as quarters of the One-inch Third Edition Large Sheet Series) to see how improbable is a purely 'defence' origin for the map,⁹ even if defence considerations led to its delayed printing, and even if the investment in its preparation must have been justified more by the possibility of its being merely the first instalment of a much bigger scheme, than of its ephemeral use as a manoeuvre map.

Although its sheet lines derived from the one-inch, and its 10 feet interval contours were probably derived from the larger-scale hill-sketches for the one-inch's hachures, the *Map of East Anglia* was fundamentally an offshoot from the six-inch. Indeed, the linework was photo-reduced

¹ *Report of committee on a military map of the United Kingdom*, London, War Office, 1892, pp 12, 13, 15, 17, 19, 20, 21, 24, 25; see also tabulated answers to circular.

² 'The question began to be active in 1910' says Brigadier H.S.L. Winterbotham (on the authority of two files on the subject, in the War Office and in the OS, both now lost) in his 'Sidelights', p.177 (MS in Ordnance Survey library, Southampton); I am indebted to Peter Clark and Ian Mumford for this reference. Readers of Winterbotham's *A key to maps* (1936) will know that his dates are often approximate rather than absolutely correct.

³ J.B. Harley, *Ordnance Survey maps: a descriptive manual*, Southampton, Ordnance Survey, 1975, 91; Peter Clark, 'Maps for the army: the Ordnance Survey's contribution', *Sheetlines* 7 (October 1983), 2-6.

⁴ Y. Hodson in W.A. Seymour, ed., *A history of the Ordnance Survey*, Folkestone, Dawson, 1980, p.263.

⁵ 'Chronology of 1:25,000 scale mapping', n.d. (?1974-5); copy in cartographic library, Ordnance Survey, Southampton. It would be interesting to know the source of the earlier information in this document.

⁶ Of which the writer has seen very few. No copies were sent to the legal deposit ('copyright') libraries, and other copies survive only in ones and twos in a few private collections. So far the writer has failed to locate examples of this mapping in any public collection.

⁷ By Peter Chasseaud, in conversation with the writer.

⁸ I owe this last point to Peter Clark, who, in correspondence, has doubted whether there is in fact a connexion between this map and the 1911 manoeuvres.

⁹ As argued for by Peter Clark, in correspondence with the writer.

directly, though this operation was effectively disguised (as it would be fifty to seventy years later with the *Pathfinder* maps) by rewriting the names, using the same fonts as those used on the six-inch. The hatching of buildings on the parent map was changed to black infill on the smaller scale. The maps were printed in six colours, outline and names in black, water in blue, contours in brown, woodland in green, roads in burnt sienna, and military information in red. With the exception of the last, the style has a marked affinity with the six-inch 'War Game' maps of Reading and part of the Chilterns produced in 1900-01.¹⁰ The maps measured 33.75 x 22.5 inches (85.76 x 57.17 cm) within the neat line, which was significantly larger than the 27 x 18 inches (68.61 x 45.74 cm) standard for one-inch and half-inch maps at this time. The map was covered by 2.5-inch squares, providing a crude reference system similar to that on contemporary one-inch and half-inch maps. As well as the military information, there was some limited piecemeal revision.¹¹

Three more points remain to be discussed before the post-1914 development of this map is considered: its dissemination, the scale, and the lack of a GSGS number. I submit that the three may be connected. First, dissemination. Though all surviving copies have 'Confidential' and 'Not to be published' printed on them, not too much should be read into this. During the first world war there was a policy whereby no revised mapping was to be published, (whether by the OS or by private publishers) which might contain information of potential use to the enemy,¹² and similar restriction notes are to be found on the one-inch third revision special sheets of Aldershot, also dated 1914, and issued for military use only during the war. Second, the scale. From 1904 to 1911 the head of the Geographical Section, General Staff was Major (later Colonel Sir) Charles Close. Not the least of Close's achievements at GSGS was the standardisation of 'rational' scales (e.g. 1:125,000 and 1:250,000) for GSGS mapping in the Empire, and though he came too late to be able to have the military half-inch made at 1:125,000 rather than 1:126,720, one cannot help feeling that, were the *Map of East Anglia* a purely military enterprise, the military would have been able to stipulate a rational scale. 1:25,344 suggests to this writer a compromise between War Office and Ordnance Survey views, with a view to a dual civil-military map. (That it was not printed for civil use in 1911-14 may have been because of a lack of Treasury authority for such a step, or may have been because of a desire to wait until a larger block of country had been covered. Equally, enthusiasm for the idea may have waned.)¹³ When Close became Director-General of the Ordnance Survey in 1911 he was just too late to have the scale changed, as he had been with the half-inch seven years earlier. Third, the lack of a GSGS number. The paucity of surviving copies possibly accounts for this point being overlooked, but it is noteworthy that no GSGS number was allocated to either the original half-inch map authorised in 1902 nor to the economy 'Training Map' format produced in 1914, although both maps were produced by the OS at War Office behest. Nor was a GSGS number allocated to the six-inch War Game maps of 1900-01. The lack of a GSGS number on the *Map of East Anglia* fits this pattern.

The 'Map of the Eastern Counties', 1914-1940, GSGS 3036

After 1914 the *Map of East Anglia* was extended, so much so that it was subsequently renamed the *Map of the Eastern Counties*, given GSGS number 3036, and eventually covered the coast from Dover to Cromer, and inland to London. Although photo-reduction from the six-inch was retained, the cartographic style was considerably modified. The most obvious change was in the writing of the names, now mostly in Egyptian, as on the better known contemporary Western Front maps. The

¹⁰ See note by Bob McIntosh in *Sheetlines* 21 (April 1988), 22.

¹¹ For example, the addition of Radio Telegraph Station in square 7E on Sheet 85 N.E.

¹² See *The Ordnance Survey and the war*, (Southampton, Ordnance Survey, 1919).

¹³ Although the WO and OS files are lost, it is possible that a search of other records in the Public Record Office might reveal some clue. A further explanation for its non-publication could lie in the 'spy scare' of 1911 which gave birth to the notorious Official Secrets Act.

contour interval was doubled to 20 feet, and the additional ‘manoeuvre’ information characteristic of the 1911-14 *Map of East Anglia* was omitted. The 2.5 inch squaring was now printed in red, and marginal instructions were provided so that more sophisticated references could be given, as on Western Front mapping. From about 1919-20 the red squaring was replaced by the British System metric grid in purple. Although the mapping was prepared for the northern part of East Anglia during the war, it may not have been taken beyond proof stage until the early 1930s,¹⁴ when all the sheets were republished, with the Modified British System grid, as part of the conversion operation which also gave birth to GSGS 3906, described later. GSGS 3906 superseded GSGS 3036 in 1940.

1:20,000 mapping, 1915-1933: GSGS 2748

Although GSGS 3036 had made an apparently good start in providing Britain with a topographical map intermediate in scale between one-inch and six-inch, further developments were rather different in nature, at any rate in the shorter term. On the Western Front the standard scales, deriving from French and Belgian practice, were 1:10,000, 1:20,000 and 1:40,000, and by 1915 1:20,000 maps of military training districts were being prepared (GSGS 2748), by photographic reduction of the OS six-inch, and with the Western Front squaring system added.¹⁵ The resulting map looked different both from GSGS 3036 and from the mature Western Front 1:20,000 map (GSGS 2742), which was wholly redrawn, and printed in several colours. The question of sheet numbering and meridian was effectively side-stepped by identifying each sheet by name only, and by making the squaring unique to each sheet. By 1918 the military were fully convinced of the value of 1:20,000 mapping, and a national series at this scale was inaugurated, retaining series number 2748. It was drawn by the Ordnance Survey but paid for by the War Office.¹⁶

The ‘new’ GSGS 2748 was a strong contrast to both the ‘old’ one and to the *Map of East Anglia*, and was much more akin to GSGS 2742. As with the latter series and with GSGS 3036, all lettering for cultural features was Egyptian, with italic reserved for water names and Roman for names of woods. Unlike GSGS 3036, there was no colouring of roads or woods, and the map was printed in only four colours: outline, grid lines and most names in black; water and water names in blue; contours in brown; and grid figures in red. The sheets were laid out on the metric British System grid (officially adopted in place of squaring in January 1919), on the meridian of Dunnose, and were designed as a national series. Indeed, the only previous OS mapping of Great Britain to be laid out as a national map, with the sheets numbered in a single sequence, had been that at the ten-mile (1:633,600) and 1:1,000,000 scales. Sheets covered an area of 15 km x 10 km on the ground, and measured 75 x 50 cm (29.52 x 19.68 inches) within the neat line. This size may have been influenced by the standard 80 x 50 cm within the neat line of Western Front mapping, though it was also fairly close to the 27 x 18 inch standard for the half-inch and one-inch, albeit GSGS 2748 had much wider margins. The sheet layout and numbering had two peculiarities. One was that the sheet numbering ran from south to north, whereas the almost invariable OS practice was to number from north to south. It is possible that this apparent eccentricity was due to the unavailability of gridded maps of northern Britain of sufficient accuracy to enable the sheet lines to be laid down with certainty.¹⁷ The

¹⁴ Information from Peter Clark, in conversation.

¹⁵ See Peter Chasseaud, ‘The development of artillery squares and artillery training maps of the U.K. 1914-1918’, part I, *Sheetlines* 10 (August 1984), 2-8, and part II, *ibid*, December 1984, 12-14. A few 1:20,000 maps bore GSGS numbers other than 2748.

¹⁶ Seymour (1980), 263.

¹⁷ This is this writer’s explanation for the adoption of south-north numbering for the one-inch Old Series of England and Wales and the early one-inch mapping of Scotland. In Ireland, where the one-inch was laid out only after the whole country had been mapped at six-inch, numbering was always from north to south. Against this, it must be pointed out that in PRO OS 1/351 there is a 1:1,000,000 map which was overlaid with yard grid lines in 1935 to enable quarter-inch sheet lines for Scotland to be devised, and it is difficult to see why such a step could not have been adopted in 1918. Or was it that there simply was not the manpower?

other was the sheet numbering, each 1:20,000 sheet being one of 25 sub-sheets within a notional series of parent sheets, covering 75 x 50 km. The comparison with the arrangement of the 1:2500 by sub-sheets of the six-inch is irresistible, and strongly implies a scheme, or at least allowance, for 1:100,000 mapping to replace the half-inch for military use. Also peculiar, if not archaic, was the use of Roman numerals for the parent sheets and letters for the sub-sheets, so that 1:20,000 sheets were identified in the manner XXIII.H., (what was wrong with 23.8?) which suggests the less-than-critical adapting of six-inch practice, and strikes one as an unfortunate blemish on possibly the most innovative and forward-looking topographical map to be introduced in Britain. Influence from the larger scales is also suggested by the use of the meridian of Dunnose, which was that employed for a large block of county six-inch and 1:2500 mapping; it would have been possible to plot the new grid in those counties (which included districts of military interest which would be early candidates for 1:20,000 mapping) by adapting existing co-ordinates, and thereby avoiding at least some of the computing work involved in extending the metric grid over the country as a whole. At a time of manpower shortages and general retrenchment such arguments would have been persuasive. Use of the Dunnose projection entailed retention of the Cassini-Soldner projection, which, for an artillery map, was less than ideal as it distorted angles. The Transverse Mercator or Gauss Conformal projection, which would be adopted later, was free of angular distortion.

Eventually 63 sheets of the redrawn GSGS 2748 were produced,¹⁸ most of them standard numbered sheets, though there were a few isolated district sheets, sometimes slightly larger than the regular sheets. So far as they have been traced,¹⁹ the sheets seem to have covered various military training areas, and also some ports. The sheets were derived from the six-inch, though with occasional revision, possibly derived from that made for the Popular Edition of the one-inch map. Larger blocks of building were hatched and smaller blocks were solid black. The more important streets in towns were named. Railways were shown by the same elongated chequer symbols as had been used on GSGS 2742 and other Western Front maps; the distinction between single and double-track lines was not very clear, but was nonetheless used for the civil 1:25,000 Provisional Edition introduced in the 1940s and finally replaced in 1989. Contours were at 5 metre intervals (presumably obtained from the hill-sketches), symbols were used to show triangulation points on buildings (so that the depiction of churches differed fundamentally from that on the one-inch), and there were lists of trig. point co-ordinates. These last were to facilitate artillery operations, and were the direct outcome of Western Front experience. Although military in origins and bearing the note 'Not to be published', by 1924 the War Office were quite prepared for the map to be put on sale, in order to offset the cost (and even printed a price on some sheets), but this was objected to by the OS; it has been suggested that this was possibly on the grounds that sales of the six-inch map would thereby be harmed.²⁰ Another objection would be that publishing such mapping for civil use would inspire demands for its extension to areas where the interest was preponderantly civil rather than military, at a time when there was insufficient money even to maintain existing mapping in a proper state.

1:25,000: GSGS 3906

In 1931-33 GSGS 2748 was replaced by GSGS 3906, at 1:25,000. At present, the reasons for making the change, which coincided with the metamorphosis of the Dunnose grid from the British System to the Modified British System, are unknown; perhaps by 1930 1:25,000 was felt to be a better international standard to which to accustom troops than was 1:20,000. Also, given the very slow progress which GSGS 2748 had made, adoption of 1:25,000 would greatly lessen the

¹⁸ This figure is given in 'Chronology of 1:25,000 scale mapping', q.v. above.

¹⁹ As with GSGS 3036, no copies were sent to the legal deposit libraries, and the only copies so far seen by the writer are oddments in private collections.

²⁰ Seymour (1980), 263. As is apparent below, this fear was probably groundless! Being all-metric would hardly have helped sales at this time.

discontinuity with the 1:25,344 GSGS 3036. At least 106 more sheets of GSGS 3906 had been produced by the spring of 1939, and another 31 had been ordered by the War Office, some of which would have begun the replacement of GSGS 3036.²¹ The change in scale was made the opportunity of minor changes in design, notably the substitution of purple for grid figures (standard since 1923 on military printings of the one-inch), and, on new sheets, shading roads less obviously. Given the use of purple for grid lines as well as figures on GSGS 3036 and on military one-inch and smaller scale mapping, the retention of black grid lines on GSGS 3906 is odd; it is possible that black grid lines were retained on the grounds of economy, rather than for design reasons. Although the old 1:20,000 sheet lines were retained, the opportunity was taken to devise a new sheet numbering system, whereby each 15 x 10 km sheet was treated as a quarter of a parent 30 x 20 km sheet, numbered by an abbreviated grid reference to its south-west corner: thus sheet 53/14 NE denoted the north-east quarter of sheet 53/14, i.e. with a south-west corner 530 km east and 140 km north of the origin of the grid, from which it was possible to deduce that the south-west corner of sheet 53/14 NE was 545 km east and 150 km north of the origin of the grid. This was not as good as the system which would be devised for the civil 1:25,000 in the late 1930s, but was certainly an improvement on the numbering system of GSGS 2748. The use of notional parent sheets divided into quarters was the best way of reconciling the existing 1:20,000 sheets with a grid-related sheet numbering system. Although most sheets were drawn at 1:15,000 scale and derived from the six-inch,²² a few were derived from air photography and were drawn in a rather different style, with uncased roads in solid black.²³

In 1939 GSGS 3906 was still a training map, which, together with GSGS 3036, covered only about a seventh of Britain. A year later it was an operational map, produced in response to the Nazi invasion threat, and covering the whole of Britain and Ireland by early 1941. The new sheets were produced by adding the grid to the latest available six-inch mapping, photo-reducing it to 1:25,000, and calling the result 'Provisional Edition'. The result was a single colour map which was, to be charitable, not always very legible, but which had the merit that it was easy to reproduce by mobile field survey units. (Some pre-war sheets were also converted to monochrome style.) A '2nd Provisional Edition' of many, possibly all, sheets was produced by photo-enlarging the contours from the one-inch and overprinting them, usually in brown, but sometimes in red or orange; the clue to the overprinting is the '2nd' being on the contour plate. A few sheets were subject to revision by Field Survey Companies and went to third or fourth editions. Although produced for immediate military needs, GSGS 3906 was found to be useful for civil planning work, and later in the war was placed on sale, so that copies often turn up in various local collections. It remained on sale until at least the mid-1950s, pending completion of the civil National Grid 1:25,000 map. As a military map it was rendered obsolete in Britain by the adoption of the Transverse Mercator projection for military use in 1950, though in Ireland, at least in northern Ireland, it seems to have continued in use for some time afterwards.²⁴

The origins of the civil 1:25,000 map of Great Britain

In the early 1930s there was still strong Ordnance Survey opposition to putting on sale GSGS 3906; apart from the putative effect on six-inch sales there was the look of the map, which Brigadier

²¹ These figures are derived from information in PRO OS 1/219, which is not wholly reliable, as it omits mention of sheets 50/16 SE and 53/16 NW, which were certainly produced. Once again, no copies were sent to the legal deposit libraries.

²² 1:25,000 'Chronology...', *loc. cit.*

²³ e.g. the special sheets *West Down and Lark Hill* (1932) and *Imber (Experimental)* (1933).

²⁴ The Ordnance Survey in the Irish Free State had started work on a 1:20,000 series, in 513 consecutively-numbered sheets covering all 32 counties, in the early 1930s, though only eight were produced before the project was abandoned. See J.H. Andrews, *A paper landscape: the Ordnance Survey in nineteenth century Ireland*, (Oxford University Press, 1975), 298-9. Like GSGS 2748 they were cartographically *avant-garde*, but unlike the British maps they were placed on sale. GSGS 3906 seems to have owed nothing to these Irish maps. The Ordnance Survey of Ireland's 1:20,000 street map of Dublin has its origins in this venture.

H.S.L. Winterbotham, the then Director-General, felt was in a style designed for military rather than civil purposes. In 1935 Winterbotham was succeeded by Brigadier M.N. MacLeod, who thought somewhat differently, and, better still, held office at exactly the right time to enable his ideas to be put into effect. The right time was the Davidson Committee, appointed early in 1935 to consider both tactical and strategic OS matters. The tactic, of getting more money to clear off arrears of revision and thenceforth to ensure that the large-scale maps be kept adequately up to date, was soon disposed of, but the strategy, of devising future policy for the Ordnance Survey, and in particular how far it should relate to metric measurement, took somewhat longer, and the Committee only made its *Final Report* in February 1938. Amongst other things, it recommended adoption of a Transverse Mercator projection with a National Grid based upon the international metre, and it recommended that experiments be made with a national 1:25,000 series, for which there had been some demand, with a view to its becoming a national series if successful.

There were in fact three groups of potential users, military, educational, and recreational,²⁵ and the possibility of a fourth, the planners. All four could make a case on the basis of existing mapping. The military had an obvious interest in a national 1:25,000, particularly if it could be paid for from OS rather than War Office funds. Furthermore, rearmament was under way, and such a map was needed for Territorial Army training; ‘unless they are accustomed to this scale in peace, they will not be able to get full value out of it in war’.²⁶ Indeed, if possible the military would have liked to have complete cover of Great Britain at this scale within three or four years. Strangely, the final report made no direct mention of the military requirement, ‘no doubt as a matter of policy in times when the common sentiment was distinctly against the martial profession’,²⁷ beyond noting that the War Office had produced some sheets at this scale (and using one of them as an illustration!); instead it mentioned the possibilities of the new map for walkers and educational purposes.²⁸ The potential educational users were said to want a new intermediate-scale map, since the one-inch gave insufficient detail and the six-inch was too large a scale to give a general picture. Unlike the other potential users of a civil 1:25,000 they had no existing real prototype to point to: the nearest equivalents were the *Celtic Earthworks of Salisbury Plain* series, only one of the six proposed sheets of which had been published, but which used GSGS 3906 material as a base, and the three-inch map of London, published in 1933 as a street map, and derived from 1:20,000 material. The London map was prepared as a street map rather than a topographical map, and lacked building infill.

The walkers had concrete examples of intermediate-scale mapping which they could cite to support their case for the new scale. Since early in the century a number of footpath maps had been printed for local footpath interest groups, occasionally by the Ordnance Survey (e.g. that of Oxford), but usually by private firms (e.g. the Wirral and Warwickshire/Worcestershire groups), using photo-reduced OS material as a base, with the paths overprinted in red or green. These maps, usually at two-inch or three-inch scale, cannot have covered more than about one per cent of Great Britain, and they were perhaps mostly intended more as adjuncts to the OS one-inch rather than as substitutes for it,²⁹ but they clearly demonstrated the potential for a properly-drawn national map series at a scale of around 1:25,000.

The planning and administrative uses of the 1:25,000 were not mentioned in the Davidson Committee’s *Final Report*, which is interesting, given that the demands of town and country planning were an important justification for catching up with the arrears of OS revision which

²⁵ As far as these three groups are concerned, my comments here are based on Seymour (1980), 263 and *Final Report of the Departmental Committee on the Ordnance Survey*, (London, H.M.S.O., 1938).

²⁶ Major-General A.F. Brooke, quoted in Seymour (1980), 263.

²⁷ Yolande Hodson’s comment, *ibid.*

²⁸ *Final Report*, p.13

²⁹ An exception was the two-inch map of Cambridge of 1936, which was unusual in that it was drawn privately (in a style derived from OS one-inch practice) but printed by the OS.

represented the tactical side of the Davidson Committee's recommendations. There were at least two examples of mapping at somewhat similar scales which, even without the wisdom of hindsight, would have made at least as good a case for the administrative potential of the 1:25,000 as did the footpath maps. These were the two-inch map of the London Passenger Transport Board area of 1935, which reproduced the two-inch drawings for the one-inch Fifth Edition at their original scale, and the three-inch map first produced around 1920 for Manchester Corporation by direct photo-reduction from the six-inch.³⁰

A final justification for the 1:25,000 was suggested by MacLeod, and that was that it might eventually replace the six-inch in mountainous areas, or indeed over the whole country, thereby effecting a considerable economy.

It was against this background that the Davidson Committee recommended that the 1:25,000 'should be tried out experimentally in certain selected areas, and, if successful, should be extended to cover the whole country in a National Series.'³¹ However, according to MacLeod,

The Committee's recommendation was couched in its tentative form only because one member wanted all work postponed until the arrears of 1/2500 revision had been overtaken, and was not to be satisfied with any assurances that the start of a 1/25,000 series would not affect field revision. I think the Committee were satisfied that there was need for a map intermediate between the 1 inch and the 6 inch. This does not mean that they thought it would be a 'commercial' success, but that it would be more suitable than either of these two scales for certain purposes for which these two scales have to be used because the 1/25,000 does not exist.

The demand for the 1/25,000 was for education, for engineering,³² and for military training, to which may be added a general public need for a better map of our mountains. The six-inch map in our mountainous areas consists almost entirely of 'rock' and 'rough pasture' symbols and is on too large a scale to be useful.³³

In fact, preparations for the civil 1:25,000 had been in hand since at least the summer of 1936, as described below, and early in May 1939 a 1:25,000 drawing section was set up.³⁴ It is unclear what, if anything, it drew, (some work on converting GSGS 3906 sheets to the new sheet lines had been carried out by April 1940),³⁵ but there can be no doubt as to MacLeod's desire to make a start on the civil 1:25,000, which would be laid out in sheets covering an area 10 x 10 km (40 x 40 cm (15.74 x 15.74 inches) within the neat line), consonant with the Davidson Committee's recommendation that larger scale maps be square in shape.

At this point it is necessary to consider the manner in which this new mapping would be made available. Three possibilities suggest themselves. The first was to produce it on the basis of revised six-inch mapping, which in turn would depend on the output of revised 1:2500 mapping, which was the basis of the six-inch. In turn, this would depend on how the 1:2500 was revised, whether by large blocks - e.g. counties - or small - e.g. towns and their immediate vicinity. (In May 1939 MacLeod

³⁰ The writer must admit that he has not investigated the evidence presented to the Davidson Committee, but if there had been a planning demand it would surely have been mentioned in the *Final Report*, and, given the request from the planners a few years later, the matter cannot pass without comment. Indeed, in the 1949 and 1955 editions of *A description of medium scale Ordnance Survey maps* there is the comment 'The committee might further have mentioned that the new scale would be of use to Planning Authorities particularly in country districts', (p13 and p12 respectively). A possible source for 1930s planning uses at a scale of around 1:25,000 might be the various volumes of planning schemes prepared by Sir Patrick Abercrombie and others.

³¹ *Final Report*, 28.

³² [This use was not mentioned in the *Final Report*.]

³³ MacLeod to Establishment and Finance Officer, 1 January 1940: minute 15 in PRO OS 1/383. The important first sentence is not mentioned by Col Seymour in his account of the development of the 1:25,000, which cites this minute: see Seymour (1980), 292.

³⁴ See minute 3 in PRO OS 1/383.

³⁵ Minute 16, PRO OS 1/383.

wrote that the 1:2500 ‘overhaul’ would start in Yorkshire,³⁶ but whether this would have been of the whole county or of more limited areas is at present unclear.) The second was not to wait for larger-scale revision, but to produce an interim edition which could be revised or replaced later once that larger-scale revision was available. The third, which need not rule out either of the other two in the longer term, was to issue immediately some ‘provisional edition’ sheets, using the GSGS 3906 material rearranged on new Transverse Mercator National Grid sheet lines. The evidence as to what actually happened in the 18 months or so following the publication of the *Final Report* late in 1938 suggests that the original scheme was to follow one of the first two options, but that by May 1939 MacLeod favoured the third option, of a ‘Provisional Edition’ using such GSGS 3906 material as was available, with any further 1:25,000 drawing being in whatever style was decided on for the civil map. In December 1938 work was ordered to be put in hand on six sheets covering the country north-west of Salisbury, in an area which had long been covered by GSGS 2748 or 3906 mapping, but it is unclear whether or not these six sheets were to be ‘provisional editions’.³⁷ At any rate, except for a fragment of experimental drawing, described later, nothing concrete survives from this period, which was effectively terminated by the end of the ‘phoney war’ in May 1940. In any case, the War Office objected to the issue of any Transverse Mercator metric-gridded maps until after the war, in order to avoid confusion with its superficially similar metric Cassini grid.³⁸

Geoffrey Cheetham: means, motive and opportunity

Three years later the civil 1:25,000 project was revived. This was no doubt in part due to MacLeod retiring and being succeeded by Major-General Geoffrey Cheetham, but MacLeod was on hand to give advice and he and Cheetham seem to have been of one mind as to the desirability of the 1:25,000. The difference was that whereas in 1939 MacLeod had had nothing much more to work on than limited GSGS 3906 coverage, some evidence from potential users, and a qualified recommendation of experimental work from the Davidson Committee, by 1943 Cheetham had complete, if stylistically undistinguished, GSGS 3906 coverage, proven civil use from the planners, who wished for a properly drawn 1:25,000 to be produced as soon as possible,³⁹ and a large drawing staff, who, in the intervals of war work, were available for civil work. At some time in 1943 or 1944 Cheetham had them put to work on the 1:25,000 Provisional Edition. The first sheet to be started, in June 1943, was 40/09 (later SZ 09),⁴⁰ which covered a district north-west of Bournemouth. The reasons for choosing 40/09 are not recorded, but could be either because an experiment in 1:1250 resurvey was in hand in Bournemouth, or because 40/09 included a mixture of tidal water, foreshore, heath, fenced country and built-up areas, giving plenty of variety within a restricted compass. Be that as it may, in January 1944 a second pilot sheet, 33/89 (later SJ 89), of the centre of Manchester was started. By 8 March a proof of 40/09 was ready, and in November specimens were distributed

³⁶ MacLeod to DMO & I, 3 May 1939, item 6a in PRO OS 1/219.

³⁷ See minute 9 in PRO OS 1/355. The chronological context of this minute inclines one against the ‘provisional edition’ interpretation; the geographical context of the sheets inclines one in favour of it. The six sheets were 4013, 4014, 4015, 4113, 4114 and 4115, corresponding to 41/03-5 and 13-15 in the numbering system used in 1945-51, and SU 03-05 and 13-15 (*Pathfinders* 1201, 1221, 1241) in the later numbering system.

³⁸ See PRO OS 1/219.

³⁹ The writer must confess to having been sceptical on this point, having failed to find contemporary documentation, but Dr E.C. Willatts, who at this time was working in the Ministry of Town and Country Planning, has confirmed that such a request was indeed made.

⁴⁰ Strictly speaking, work was authorised on 14 June and was in hand by 17 August: ‘Chronology’, *loc. cit.*, citing Director-General’s conference minutes. This is also the main source for the rest of this paragraph. The development of the metric National Grid, and the various referencing systems intended or used in its early years awaits detailed study. Here we need only note that until 1951 the 100 km squares were designated by number derived from full co-ordinates, and thereafter by pairs of letters.

outside the Ordnance Survey.⁴¹ 40/09 and 33/89 were the first two 1:25,000 sheets to go on sale, in November and December 1945 respectively.

The original intention was to publish the Provisional Edition by large regional blocks, and by the summer of 1945 two were in hand, covering Lancashire, north Cheshire and part of the Lake District, and a substantial part of East Anglia. The reason for choosing these two areas is unknown. The Lancashire block could be interpreted as a logical extension outwards from Sheet 33/89, but then a Dorset/Wiltshire block would have been a logical extension from Sheet 40/09. The East Anglian block is also puzzling; a possible explanation is that it is connected with the contemporary drawing of one-inch New Popular Sheets 136 and 137 at 1:25,000 scale, though the exiguous documentary evidence⁴² does not support this. Using ferro-prussiate ‘blues’ of the 1:25,000 as a drawing key would be a much more economical procedure than that hitherto used, of necessity, for the one-inch, of photo-reducing the six-inch to two-inch scale, and tracing off the required detail via transfer paper, an operation which effectively meant that linework and building outlines had to be ‘drawn’ three times over. Whether the 1:25,000 Provisional Edition indeed served as a one-inch drawing key in East Anglia in 1944-6 cannot as yet be said, but, subject to the modification of photo-reducing the drawing key to 1:40,000, it served as the basis for the one-inch Seventh Edition (later Seventh Series) when work on that started in 1948.

Publication by regional blocks soon broke down, as ‘statutory demands prevented the progressive development over the country that was intended, and production was diverted to groups of sheets here and there covering many of the main towns and their immediate neighbourhoods’.⁴³ The maps appeared much more slowly than had been intended, partly because expected post-war staffing levels were never reached, thus ‘making nonsense of its intended function of meeting immediate [planning] needs’.⁴⁴ Had Cheetham’s original intention been fulfilled, the Provisional Edition would have been finished within two years, but by January 1948 only 516 of a projected total of about 1850 sheets had been completed,⁴⁵ and though another 620 had been published by the time that Cheetham retired eighteen months later, the Provisional Edition only reached its maximum extent of coverage in 1956. By that time the first sheets intended to replace it were about to be published. However, one more new Provisional Edition sheet, a 20 x 15 km special covering the Isles of Scilly, was published in 1964.⁴⁶ Admittedly, the original intention not to publish the sheets of certain mountain areas in Scotland and Wales⁴⁷ was changed in January 1950,⁴⁸ so that the final total of Provisional Edition sheets was 2027. Even so, it excluded most of the Scottish highlands and islands, and the official estimate of the total number of sheets in the ‘regular edition’ which was intended to replace it was 2632. This number would have been somewhat greater (2859) had there not been a number of 10 x 12, 12 x 10 and 15 x 10 km sheets published in coastal areas.⁴⁹

‘The term “Provisional” must not be read to imply any denigration of the quality of the map production. On the contrary, admiration for the map is widely expressed, and it is becoming increasingly popular.’⁵⁰ It would perhaps be unfair to describe this official version of events as

⁴¹ There is one in the ‘specimen drawer’ in the map room of the Royal Geographical Society.

⁴² In PRO OS 1/198.

⁴³ *A description of Ordnance Survey medium scale maps*, Chessington, Ordnance Survey, 1949, p.14.

⁴⁴ Col Seymour in Seymour (1980), 291.

⁴⁵ Seymour (1980), 291.

⁴⁶ It replaced a two-inch special sheet, first published in 1933, and effectively a derivative of the one-inch rather than an anticipation of the 1:25,000. The same comment applies to the two-inch map of Jersey of 1914 and the three-inch map of Guernsey of 1933. All three are conspicuous for the omission of field boundaries.

⁴⁷ These excluded areas are indicated on Plates VIII and IX of the 1949 *Description*.

⁴⁸ Minute 83, PRO OS 1/383.

⁴⁹ Minute 51 in PRO OS 1/355.

⁵⁰ These words appear in both the 1949 and 1955 editions of *A description of Ordnance Survey medium scale maps*, (pp 14 and 13 respectively).

economical with the truth, but it is undeniable that, though a much cleaner-looking map than the contemporary one-inch, the new map failed to sell in anything like the quantity of the smaller scale. Even by 1953-4, with the series nearly complete, the average sale for each sheet was only 17 copies per year.⁵¹ No doubt the planners were pleased, but there were simply not enough planners to justify production of the series on these grounds alone, and it was apparent that the walking market was not being adequately tapped, either.

‘It remains something of a mystery why the series was ever made at all’, observes Col Seymour. ‘Many of the planners working during the war on post-war reconstruction had certainly found the War Office 1:25,000 (GSGS 3906) very useful. This map... was very difficult to read, ... and Cheetham referred to it as being “nearly up to date”...; the wish for a “good 1:25,000 map” might have been an acknowledgement of the value of the War Office map and an expression of the planners’ hope for a more legible version of it.’⁵² With the advantage of hindsight (and in particular in the light of the protests in later years when the 1:25,000 had started to make its mark with a wider public, but was still uneconomic) this verdict may be justified, but it is fair to say that there was good reason for Cheetham following the course which he did, even if one sets aside the fact that the planning requirement was a convenient excuse for a course of action already decided on. It could be argued that in the 1940s a civil 1:25,000, were there really a need for one, could have been produced much more easily in the way that GSGS 3036 had been produced a quarter of a century before, by taking a direct photo-reduction of the six-inch, making some discreet retouchings, and rewriting the names. However, there was a subtle difference. In 1911-14 the OS had all its reproduction materials for the six-inch in pristine condition, and it was easy to get good results with a venture such as GSGS 3036. By 1943 most of the original material for the six-inch had been destroyed, and it survived only as prints, of variable quality, on enamelled zinc. Had the method used for GSGS 3036 been repeated the results would have been nowhere as good, as the parent six-inch material would have been much inferior. Even in the 1930s the six-inch material tended to lack the crispness which had characterised it before 1914; this is exemplified by the two-inch Oxford footpath map of 1933, which is of similar quality to the GSGS 3906 sheets of 1940.

The cartography and reliability of the 1:25,000 Provisional Edition

As was said above, MacLeod lost no time in making preparations for producing a civil 1:25,000, and as early as August 1936 a specification for the new map was being worked out, based on a mixture of six-inch, one-inch and GSGS 3906 practice.⁵³ A copy of GSGS 3906 Sheet 47/16 S.W. (Andover) had hand-colour added to it, (red and yellow road infills and green woods infill), giving a similar general result to the contemporary non-relief one-inch; MacLeod liked the look of the map, but felt the colour scheme to be too elaborate, and henceforth seems to have thought of the map as a three-colour affair, similar to GSGS 3906, but without the purple grid figures, (which would presumably have been added to any military printing). Names and some ornament would have been produced by photonymograph (an early form of photo-typesetting), but there is no mention of the typeface which would have been employed.⁵⁴ If any mapping was drawn to this specification then it has been lost, with one possible exception. This is a fragment of the West End of London, drawn on tracing paper some time in, or more probably some months before, August 1940, to demonstrate the effect which including street names would have on breaking the casing of blocks of buildings. The street names are in typed Old Style Roman, which was used extensively in the 1940s by the OS, particularly on 1:2500 and early National Grid 1:1250 maps, and building infill is stippled, in place

⁵¹ See minute 6 in PRO OS 1/1123.

⁵² Seymour (1980), 291-2.

⁵³ Minute 1 in PRO OS 1/355.

⁵⁴ *Ibid.*

of the hatching used on GSGS 2748 and 3906 and on the first Provisional Edition sheets, prepared in the mid-1940s.⁵⁵

One cannot thus say how far the original version of Sheet 40/09 was a realisation of what MacLeod had envisaged in 1939 and how far it represents Cheetham's own ideas. What can be said is that the first, unpublished, version of Sheet 40/09 certainly did not represent Cheetham's final ideas. Although its original style was used for the 123 sheets comprising the Lancashire and East Anglian blocks, before it went on sale in November 1945 40/09 had been drastically modified, and it was this modified style which was used for the bulk of the series. The original style was in three colours, black for outline, most names and grid, blue for water and water names and orange-brown for contours and road infilling; building infill was hatched black, as were field boundaries and vegetation ornament, and names were in an alphabet last seen on 1:2500 mapping prepared in the late 1920s and early 1930s. It was an alphabet which was attractive at the larger scale but which tended to look heavy and drab at the smaller. Perhaps Cheetham felt the same, as Sheet 40/09, in its final form, had lettering in Times Roman, grey building infill, and grey field boundaries and vegetation ornament. It was certainly a cartographic style which one could admire. Experiments had been made with the original version of Sheet 40/09 with the road-and-contour colour, using a reddish-brown similar to the 'RAF Number 17 Brown' used on some 1944 printings of the War Office one-inch, GSGS 3907, and experiments had also been made with green for the vegetation symbols. Though green usually improves the look of a map it did not really do much for 40/09 in its original form, and the extensive use of grey in the second version combined both variety and flexibility.⁵⁶

Although both the first and the second versions of Sheet 40/09 looked radically different, both from anything previously seen at this scale, and indeed anything previously produced by the Ordnance Survey, there was some continuity of content with GSGS 2748 and GSGS 3906. A few road names were retained, usually on the periphery of built-up areas, and trigonometrical points on buildings continued to be shown, with a view to military use. (Indeed, they continued to appear on new 1:25,000 sheets until the mid-1980s, by which time the original reason for them must have been long forgotten.) The railway symbols followed the example first set on the Western Front by GSGS 2742, and continued on GSGS 2748 and GSGS 3906. Innovations included parish boundaries and names and National Trust areas. Contours were provided at 25 feet intervals;⁵⁷ they were mostly derived by interpolation from the nineteenth century hill sketches for the one-inch, which had also supplied the interpolated 10 ft, 20 ft and 5 metre interval contours on GSGS 3036, 2743 and 3906.

Until 1948 road infill was reserved for those roads which bore Ministry of Transport numbers; uncoloured roads might be anything from freshly tarred to the most waterlogged of rutted cart-tracks. Following complaints, colour infill was extended to unclassified roads, presumably in practice those which were tarred, and the original bold style of road-drawing was modified so as to reflect the sinuosity of many roads more accurately. At about the same time the bottom margin was redesigned; in its original form, it included a full legend, including a note on the projection and spheroid used for the National Grid, necessitating using a cumbersome semi-Bender fold. From 1948 the conventional signs and geodetic information were omitted, 'to save paper', and it was possible to use an ordinary Bender fold. The Provisional Edition diligently continued to save paper in this fashion until its demise forty years later.⁵⁸ Otherwise, except for the addition of a motorway symbol *circa* 1960, and

⁵⁵ See items 22A-D in PRO OS 1/355.

⁵⁶ There is a set of proofs of Sheet 44/09 in a folder of 1:25,000 specimens in the cartographic library at Ordnance Survey.

⁵⁷ See K.M. Clayton, 'A note on the twenty-five foot "contours" shown on the Ordnance Survey 1:25,000 map', *Geography*, 38 (1953), 77-83.

⁵⁸ The original margin style was retained in 1948-9 for military printings (GSGS 4627): see items 13A and 15A in PRO OS 1/567.

the bowlderising of industrial descriptions to 'Works' and 'Mine' as a security measure from 1957 onwards, the 1:25,000 Provisional Edition lasted to its end in 1989 with the least apparent design changes of any post-war OS map series. In 1968 it was officially redesignated the 'First Series', but this never appeared on the maps themselves.

At first the Provisional Edition was offered in three forms: the standard coloured version, an outline version printed in grey, and an Administrative Areas Edition. The Administrative Areas Edition originated in the need of the Parliamentary Boundary Commission for maps at this scale, and it was thought that there might also be a sale for them amongst local authorities, public utilities, 'and possibly the public generally'.⁵⁹ These predictions were not borne out by experience; in 1948 new publication was restricted to sheets containing wards in boroughs or urban districts, and from 1953 the only sheets maintained were those covering London. There was also a military edition of the standard coloured map, GSGS 4627, with grid figures overprinted in purple and, later, in blue.

The Provisional Edition was initially produced by drawing at 1:15,000 on photo-reductions of the latest available six-inch material, printed in ferro-prussiate blue on enamelled zinc. The six-inch material was augmented by any other revision material which could be found, which might include one-inch material, where it could be safely enlarged, bomb-damage surveys, some limited 1:2500 revision, scraps of surveys undertaken by military units during the war, and, in south-east England, early post-war road revision.⁶⁰ As a result it was as up to date as it could be given the material available to the OS at the time of its compilation, but unfortunately there was a great disparity between the consequent paper landscape and the real landscape perceived by its users, potential users and critics. For example, it was complained in 1949 that the Edinburgh sheet was twenty years out of date,⁶¹ and whilst this sheet, like all the others, would have incorporated the results of the rapid revision of new urban development carried out for Air Raid Precaution purposes in 1938-9, the accusation would certainly have been true of the less developed parts of the sheet. The semantic distinction 'Provisional Edition' recognised this difficulty but did not remove it. In 1950 work began on republishing the Provisional Edition with revision primarily collected for the One-inch Seventh Series; as the field-work was at six-inch there was no great problem involved in using it for the intermediate scale. This was not a high priority, and the publication of the revised sheets was only completed in 1965. By that time a second one-inch revision cycle was under way, but, with a few exceptions, henceforth only a limited amount of major road revision was added to the Provisional Edition.

Although the more vocal specialist and professional users might complain of the out-datedness of the Provisional Edition, they were probably not representative of the map-using public at large, who had formed the main civil justification for the 1:25,000 at the time of the Davidson Committee, and who had two quite different objections. They were related: the small sheet size, and the sheet arrangement and numbering. In view of subsequent events there can be no doubt that these two causes were responsible for the long-continued comparative failure of the 1:25,000 in sales terms. Though the same geographical area could be covered much more economically at 1:25,000 than at six-inch, the small sheet size made the 1:25,000 an expensive buy vis-a-vis the one-inch. In the late 1940s both the one-inch New Popular and the 1:25,000 cost three shillings for the mounted-and-folded format, which represented 19.3 square inches of map face per penny for the one-inch against 6.9 square inches per penny for the 1:25,000. The wonder was less that so few 1:25,000s were sold, as that so many were. The 1:25,000's sheet size was of course the outcome of MacLeod's eagerly-accepted advice to the Davidson Committee that in future OS maps at larger than one-inch scale should be laid out in regular butt-jointed sheet lines on the National Grid. One could plead in

⁵⁹ Item 1A, in PRO OS 1/224. This file includes a version of Sheet 36/37, which has GSGS 3906 material inside Provisional Edition marginalia.

⁶⁰ See minute 1A in PRO OS 36/7.

⁶¹ Seymour (1980), 291.

mitigation of MacLeod's advice that in 1939 it had been hoped to sell the 1:25,000 at one shilling per sheet, which would have made the price per square inch of map similar to the one-inch,⁶² and one might also plead that he may have expected the National Grid to catch on with the public in a way that it signally failed to do. The argument that one could deduce the sheet number of a 1:25,000 or larger scale map simply from a grid reference was a sound one, but it rested on a very shaky foundation: the assumption that the grid would be used. The National Grid was probably an even greater disaster than the 1:25,000 map; the one-inch and smaller scale maps carried it but did not ultimately depend on it, and so for them the baleful influence of the Grid was effectively neutralised.⁶³ But the 1:25,000 suffered. Complaints about the sheet numbering system and inconveniently small size made no impression with those responsible for Ordnance Survey policy; the confident prediction in 1950 that criticism of the sheet numbering system would 'evaporate' once the figure designations of the 100 km squares had been replaced by letters must rank amongst the most gross misjudgements in Ordnance Survey history.⁶⁴

Sales were probably not helped by the information given on, or omitted from, the covers. The first cover design had a diagram showing the sheet inside plus the twenty-four surrounding sheets, but the surrounding sheets were not numbered. A later development was a series of regional indexes on the back cover, which could potentially help to locate sheets over a wide area of interest, although in practice the sheet inside often seemed to be close to the edge of the diagram. From 1970 hinged card covers were abandoned for the Provisional Edition, in favour of printing an integral cover, a *national* index (wonder of wonders!) and the legend on the back. This showed belated imagination, which before had often been conspicuously lacking. The Provisional Edition was originally offered either paper flat, or mounted and folded; around 1950 it began to be offered paper folded. The mounted and folded format sold poorly, and was discontinued in 1954.⁶⁵

The War Office and the 1:25,000 Regular Edition

Although in the early 1950s it was apparent that the 1:25,000 was not proving particularly successful with civil users, there was one other user who seemed to have few complaints: the army. The military use was the *eminence grise* behind the development of the 1:25,000 in the 1950s. In the 1930s the War Office had been the most obvious customer for a national 1:25,000, and in the 1940s Cheetham had provided one, albeit in a 'Provisional Edition'; the long-term plan was to replace it with a Regular Edition, which would derive from the larger-scale resurvey which had begun in 1943. The 1:25,000 was not the only instance where a tentative Davidson recommendation had been elevated into a centrepiece of OS activity; Davidson had recommended consideration of 1:1250 urban mapping once the arrears of 1:2500 revision had been cleared off, but by 1945 the OS had committed itself to the 1:1250, effectively as a substitute for further 1:2500 revision of urban areas, and from 1945 to 1960 most of the OS large-scale field survey effort went into the 1:1250; the output of National Grid rural 1:2500 and derived six-inch mapping was much more modest. In the mid-1940s Cheetham seems to have envisaged completing a geographically ambitious 1:1250 programme by 1955, and the 1:2500 by about 1960; in the event a somewhat less extensive 1:1250 programme was completed in the late 1960s and the 1:2500 in the early 1980s. Thus the 1:25,000 Provisional Edition had a much longer life than its principal architect had intended, and though Cheetham was anxious to do something about starting the Regular Edition before he retired, in 1949,⁶⁶ the

⁶² See minutes 10-15 in PRO OS 1/383.

⁶³ The author hastens to add that he stands by the view he has often expressed in the past, that the National Grid is one of Britain's most underused assets; but it is one thing to have the grid as a reference system, which the public might accommodate itself to in the course of time, and another to impose it on them with the sheet numbering system.

⁶⁴ See item 97A in PRO OS 1/567.

⁶⁵ Minute 10 in PRO OS 1/1123.

⁶⁶ See early minutes on PRO OS 1/567. At this time 36/27 was intended to be the pilot sheet.

replacement map was to develop much more slowly. That it developed at all was probably due at least as much to the War Office as to civil users, actual or potential; that it developed along the rather erratic lines that it did was also due to the War Office.

One difficulty with providing maps for the military was that its interests tended to change at a rather faster rate than was convenient for the Ordnance Survey. The main military scale, the one-inch, was a hardy perennial, but other scales were more transient. In the 1890s there had been WO interest in a scale larger than one-inch; in the 1900s interest switched to the half-inch; after 1910 it switched to larger than the one-inch, eventually settling on 1:25,000; and in the late 1940s interest seems to have moved more towards the one-inch, and at any rate somewhat away from the 1:25,000. The immediate military justification for national GSGS 3906 cover was removed with the end of hostilities, and though a military edition was produced of the National Grid 1:25,000 (GSGS 4627), at first coverage was limited to military training areas. A symptom of returning interest was the systematic preparation of three sets of reproduction materials, one of which was controlled by the OS, one by the Directorate of Military Survey, and one of which was kept in the United States, in case of an 'emergency'.⁶⁷ In the 1950s coverage of GSGS 4627 was extended (though it was never completed),⁶⁸ as it was expected that the map would be used for civil defence work in the event of nuclear attack; as it was impossible to predict fall-out it was essential to have the whole country covered at this scale.⁶⁹ However, it was evidently not so essential that there was any urgency, and before national coverage by GSGS 4627 was complete the military had once more lost interest in the 1:25,000 as a national series, retaining it only for a few training areas, on *ad hoc* sheet lines. So far they have not changed their mind again on this point.

In the 1950s the military were the most contented of the 1:25,000's users and potential users. They had no quarrels with the fundamental design of the map, they were untroubled by the state of its revision, they were the one group of map-users who employed the grid, and they loved the sheet size, which was extremely convenient for printing by mobile units in the field. It was unfortunate that the makers of the map were becoming prey to doubt about the sheet size. By the early 1950s, when it was clearly apparent that the 1:25,000 was not the hoped-for success with the public, the Provisional Edition was nearly complete, and though it was policy that, once enough National Grid resurvey material became available, the Regular Edition would be started, it called for no great leap of imagination to conceive the idea of not proceeding with the Regular Edition, and allowing the Provisional Edition to wither away, at any rate as a civil map; if needs be, all the materials could be handed over to the Directorate of Military Survey, to do what they wished with them.⁷⁰ In the early 1950s there was considerable discussion of the Regular Edition within the OS, and experiments using Provisional Edition material were made, which included reverting to field boundaries in black (the grey was nice-looking, but a nuisance to revise), and experiments with uncased buildings in urban areas,⁷¹ but it was only in 1955 that this work started to come to fruition. By this time the OS was under considerable financial pressure, and running-down the 1:25,000 started to look attractive.

However, though the 1:25,000 might not be a complete success with the public, it was not a complete failure either, and any attempt to abandon it would not go unnoticed. It was decided to try a few Regular Edition sheets, to 'sound the market', and in May 1956 a block of eleven (SX 45-7, 54-7, 64-7) covering Plymouth and south-west Dartmoor were published. The style of the published maps was similar to the Provisional Edition, the main differences being the use of black for field boundaries and a green infill for woods, which involved a fifth printing, but which was thought, rightly, to make the map more attractive; the offsetting economy of an integral cover was tried, but

⁶⁷ DMS to DGOS, 12 April 1950, item 36(1)A in PRO OS 1/567.

⁶⁸ Information from Peter Clark.

⁶⁹ DMS to DGOS, 4 November 1955, item 26A in PRO OS 1/1123.

⁷⁰ See DGOS to DMS, 4 Oct 1955, item 25A in PRO OS 1/1123.

⁷¹ See minute 84, etc, in PRO OS 1/567.

the published maps appeared in the customary hinged card covers. As with Sheet 40/09 in 1944, some more adventurous colour-schemes were tried, including red road infill and green building infill.⁷² A legend was once more provided, necessitating reversion to the semi-Bender fold.

A feature of the eleven sheets as first published, which was deleted from the revised editions published in 1959, was the provision of a convention (pecked line plus ‘RW’) for public rights of way, which appeared in the legend, but not on the map. Though in 1949 local authorities had been given the duty of compiling Definitive Maps of public rights of way, the work went forward slowly, and though in 1955 the OS might have considered showing them on the 1:25,000, by 1956 it was thinking of showing them only on the one-inch, and made experiments with One-inch Seventh Series Sheet 85 to this end. By this time the 1:25,000 was beginning to make some impression with walkers, and S.F. Marriott, the Rambler’s Association mapping specialist, had an unsatisfactory correspondence with the OS, in which he urged that rights of way be shown on the 1:25,000, to which the OS response was that the 1:25,000 was an uneconomic map: ‘... demand... does not justify any money being spent on it’ with sales ‘apathetic’.⁷³ Marriott’s response was that the 1:25,000 would be much more popular were rights of way to be shown.⁷⁴

The eleven Regular Edition sheets sold rather better than had their Provisional Edition predecessors, and this helped to give the 1:25,000 a stay of execution. At the same time there were two contradictory developments. MacLeod’s hope that the 1:25,000 would enable the six-inch to be abandoned in mountain areas was translated into policy, and remained policy until February 1956, when a meeting in Edinburgh between the OS and various Scottish map users showed that there was a strong desire for complete six-inch cover of Scotland.⁷⁵ It is possible that the Scots were pushing at a door which was ajar, but the OS immediately changed its policy, and the Scots were assured of their six-inch. A useful consequence for the OS was that one residual justification for the 1:25,000, that of being the largest scale at which the more remote areas would be published, was removed, though a disquieting feature of the Edinburgh meeting was that the planners were still keen on the scale. So were their counterparts in England, who were told in 1956 that experiments were in hand with joint six-inch / 1:25,000 drawing, and who reluctantly acquiesced in a suggestion that field boundaries might be omitted, thereby saving 20 per cent of drawing costs.⁷⁶ One big problem with the Regular Edition was that hitherto it had been assumed that it would have to be wholly redrawn, as the Provisional Edition material was felt not to be up to the best OS standards. What was contemplated was in effect almost a reversion to the method which had been used forty years before for GSGS 3036, (and which might have been inspired by more recent recollections of GSGS 3906), whereby a single outline drawing would suffice for both the six-inch and the 1:25,000, though the provision of names would have to continue to be a separate operation for each scale. Several experiments were carried out in 1955-7, and eventually a successful compromise between an overbold six-inch and an unduly cramped 1:25,000 was achieved.⁷⁷ Also tried, in 1958, was an early version of what twenty years later would be called trichromatic printing; the results look promising, but were not persisted with.⁷⁸

Sheet 856: a false dawn

⁷² The 1955 proofs on which these experiments were carried out are in PRO OS 36/7.

⁷³ Collins to Marriott, 27 Feb 1956: item 273A in PRO OS 1/700.

⁷⁴ For the development of rights of way depiction see PRO OS 1/700.

⁷⁵ See PRO OS 1/798, particularly item 59A.

⁷⁶ See minute 23 in PRO OS 1/1123, and minute 36 in PRO OS 36/7.

⁷⁷ For the documentation see PRO OS 1/1241.

⁷⁸ For the background to this see PRO OS 1/1123, minute 49; the only known surviving example is in a folder in the Cartographic Library at Ordnance Survey.

By this time the complaints from the public about the sheet size and numbering of the 1:25,000 were making an impression on the Ordnance Survey. Unfortunately for the public, whilst they only had to deal with the OS, the OS had to deal with both them and with the War Office, who strongly favoured the *status quo*. The fundamental difficulty was that the War Office wanted a map which could be reproduced by mobile survey units, which meant a maximum sheet size of 15 x 10 km, which was inadequate to meet the complaints from the public. The eventual solution was a bold one, and consisted of a consecutively-numbered series of 20 x 15 km sheets for civil use. This size was dictated by a desire to have a sheet size comparable with that of the one-inch Seventh Series; that it even more closely resembled that of the quarter-inch Fifth Series then in preparation seems to have been a coincidence. Each 20 x 15 km sheet could be split in half, and reproduction materials for the consequent 10 x 15 km sheets supplied to the military. Though the military version would only have proper margins round three sides, this, as the then Director-General, Major-General J.C.T. Willis, remarked, would be unlikely to be troublesome in war time, when everyone would have more important things to worry about. Two sheet line schemes were drawn up, the first of which envisaged 997 sheets, and the second of which reduced the total to 977, consecutively numbered.⁷⁹ The sheets were butt-jointed, and most large urban areas fell inconveniently across two or four sheets, but this was inevitable given the anxiety to have the minimum number of sheets in the series.

At this time (1958) it seems to have been the intention to use the 20 x 15 km format not only for the Regular Edition, but also for the Provisional Edition. Four 20 x 15 sheets were prepared, 409 (Durham), 856 (*Ilfracombe and Lundy*), and 950 and 951 (Isle of Wight),⁸⁰ but only 856 was put on sale. It had an integral cover, which was guillotined from paper-flat copies, and green infill for woods, but otherwise the cartography followed the Provisional Edition specification.

The emergence of the 1:25,000 Second Series

There were then second thoughts about the advisability of using the 20 x 15 km format for the Provisional Edition, and it was decided to reserve it for the Regular Edition. There were then further doubts about so large a sheet size at all, possibly because the numbering could not be related to the grid,⁸¹ but possibly also because the smaller the sheet size, the less the area of National Grid large scale mapping which would be needed before each sheet could be produced. At any rate, in February 1962 the 20 x 15 km size was abandoned in favour of 20 x 10 km,⁸² and work was put in hand immediately on two pilot sheets, TQ 21/31 and NC 45/55. TQ 21/31 was first proved in March 1963, and, after various modifications, most notably moving the legend and other notes from the bottom of the map to the left-hand side,⁸³ the first fourteen Second Series sheets were published in December 1965.

Even then, however, progress was not smooth, and it was by no means clear whether the Second Series would ever be completed, notwithstanding that six-inch mapping drawn boldly - many thought over-boldly⁸⁴ - with a view to 1:25,000 use was now being produced in some quantity. One problem was the long time-lag between 1:2500 and 1:1250 field survey and eventual 1:25,000 publication, 'with the embarrassing sequel that one of the early Second Series 1:25,000 sheets was found to be more out of date in some respects than the Provisional map it replaced. To make matters worse, sales

⁷⁹ The 997 sheet layout is in OS 1/1123, together with tracing paper overlays, which were manipulated to obtain the best fit. A 977 sheet layout index at 1:1,250,000 was printed (copy in Cartographic Library, OS), but it is not known if it was published.

⁸⁰ 1:25,000 'Chronology...', *loc. cit.*

⁸¹ Harley (1975), 94.

⁸² At about the same time the second Land Utilisation Survey started publishing its work at 1:25,000 in 20 x 10 km sheets, using Provisional Edition material. It would be interesting to know who was influenced by who in this.

⁸³ One wonders whether this was done so as to avoid having to use the semi-Bender fold.

⁸⁴ Seymour (1980), 328.

of the map remained obstinately low⁸⁵ and the Ordnance Survey felt obliged to warn map users at the consultative meetings in 1969 and 1970 that it was doubtful if production could be continued, an announcement which at the time gave rise to no more than a murmur of dissent.⁸⁶ As a compromise, reissuing Provisional Edition material on Second Series sheet lines seems to have been considered,⁸⁷ but instead the next development was the metrication of the series, with either relabelled imperial 25 foot interval contours or else proper metric 5 metre interval contours, as on the pre-war GSGS 3907. From 1972 the Times Roman of the earlier sheets was replaced by Univers, though only very exceptionally were existing sheets republished with complete relettering.

Although between 1951 and 1965 a good deal of work had been put into working out the design of the Provisional Edition's successor, the Second Series has nonetheless been subject to numerous minor design changes. Amongst the more notable have been the changes to road conventions. Until 1976 road classification was by solid or pecked infill, with the lowest classification using infill being employed for roads which were metalled but untarred. From 1976 the pecks were replaced by stipple, and all untarred roads were shown without infill. In the mid 1980s names of rural roads started to appear. In 1979 the legend was rearranged, so as to provide room for an integral cover, in an effort to save costs. The new front cover featured an extract from the 1:625,000 *Routeplanner*, overprinted with a block of fifteen 1:25,000 Second Series sheets; unfortunately, only a limited number of extracts were prepared, and they were not as useful as they should have been for showing adjoining sheets, as the sheet inside the cover was often on the edge of the diagram. Earlier sheets were printed using a fairly strong orange, which enabled the contours to be read clearly; after 1980 colour control seems to have been lax, and the orange was sometimes pallid, rendering the contours nearly illegible.⁸⁸

From 1966 onwards the OS was under increasing pressure to recover more of its costs, and in 1973 there was a firm proposal to abandon the Second Series. This led to strong complaints from walkers and others, and in October 1973 the retention of the series was announced.⁸⁹ This was satisfactory as far as it went, but the rate of output of the Second Series, at around 35 sheets a year, remained low; thanks to pressure from the Ramblers Association the OS increased output to about 80 sheets a year after 1975.⁹⁰

The Pathfinder and the Outdoor Leisure Maps

One practical reason for the pressure to complete the Second Series was the demand for public rights of way information. By the early 1970s Definitive Maps had been prepared for most of England and Wales and were being used to show rights of way on the one-inch Seventh Series and its 1:50,000 successor. The big drawback to these two smaller scales was that they did not show field boundaries, and a map with field boundaries was very desirable to those who wished to follow rights of way, but who did not have the map reading skills to follow those not clearly indicated on the ground, and not clearly referable to other features. Thus by the mid-1970s the argument was less for the 1:25,000 *per se* and more for a map which showed both field boundaries and public rights of way, conditions which the Second Series met very well. Admittedly, as Marriott had pointed out twenty years earlier, the 1:25,000 Provisional Edition with rights of way would have served most practical purposes equally well, and, as an interim measure, in 1976-7 the OS overprinted a few Provisional Edition sheets with rights of way information, in response to a request from some county

⁸⁵ [As many of the early sheets covered northern Scotland, this is perhaps not surprising!]

⁸⁶ *Ibid.*

⁸⁷ Cartographic Library, Ordnance Survey, experiment 'To test the accuracy of the 1:25,000 Provisional Series.' Sheets SK 49 and 59 were used, overlaid on the Second Series.

⁸⁸ See, for example, the original printing of Sheet 40/50.

⁸⁹ 'Chronology...', *loc. cit.*

⁹⁰ Information from Mr Michael Holroyd.

councils.⁹¹ In 1979 the great interest of the walkers in the 1:25,000 Second Series was recognised by giving it the alternative name of *Pathfinder*.

Despite this, there was a further threat to its continuance in 1981-2 in the wake of the Ordnance Survey Review Committee's findings, and its questioning of the utility of the map. Once again there were vocal complaints from the walkers, and the map was allowed to continue; by this time it had at last reached the stage where it would be very difficult to abandon it, as so much had been published. Various cosmetic changes to the map were considered, including a much more elaborate colour scheme, similar to that of the 1:50,000, but which improvements in printing technology would enable to be printed with only four passes through the press. Investigations suggested that the extra cost of this would not be offset by sufficient extra sales.⁹² The experiments had included a coloured border, and in 1983-4 sheets started to appear with a screened green infill between the frame and the neat line. The sheet numbering system also came under review, and although the adoption of a consecutive numbering system as an alternative to National Grid numbering was announced in 1983, it was two or three years before it came into use.⁹³

Meanwhile, a series of Outdoor Leisure Maps had appeared, the first being *The Dark Peak* in 1972. The original idea was an economic reissue of whatever Provisional Edition or Second Series material happened to be available, on sheet lines designed to cover areas of tourist interest, with the addition of green wood infill where necessary and tourist information symbols in blue.⁹⁴ The standard sheet size was much larger than anything hitherto used for this scale, being 20 x 25 or 25 x 20 km, (80 x 100 or 100 x 80 cm within the neat line). The maps were moderately successful, but, as a result of the experiments with the *Pathfinders*, in the early 1980s they started to appear in a somewhat more elaborate style, characterised by a ground tint, brown contours, and four road infill colours, as on the 1:50,000. This development was the outcome of the experiments of 1981-2 designed to improve the saleability of the Second Series; presumably the Outdoor Leisure Maps sold in sufficiently greater numbers to justify the extra cost of preparing the printing plates. The Outdoor Leisure Maps were further promoted in status in the mid 1980s, when it was decided not to publish, or continue publishing, Second Series sheets wholly covered by Outdoor Leisure Maps. As a result, when the *Pathfinder* was finally completed in December 1989, with the publication of Sheet 1362,⁹⁵ it was a hybrid, of a minority of Times Roman and a majority of Univers sheets, of another minority of imperial and a majority of metric sheets, and depending on some coverage by Outdoor Leisure Maps to provide complete cover of Great Britain at 1:25,000 scale.

A number of Second Series sheets have been republished in revised editions, characterised by a new edition letter, which incorporate all available larger-scale revision, but the output is slow, and is in great contrast to the output of fully revised sheets of the 1:50,000.⁹⁶

Gower, or a goner?

In 1992 an experimental 23 x 20 km sheet, 1126 *Gower*, was published. It is generally similar to the standard *Pathfinders*, but it includes tourist information in blue, like the Outdoor Leisure Maps. Whether, as suggested by OS,⁹⁷ it will be the start of a further stage in 1:25,000 development, or merely a blind alley like Sheet 856 thirty years before remains to be seen, but it is reported to be selling well, and gives one cause to hope that many more such combined sheets will be published. At

⁹¹ See *infra*, p.44.

⁹² OS Experiment 376.

⁹³ Even so, after some six or seven years of the consecutive sheet numbers, one still finds new stock on sale bearing on the National Grid numbers, and Stanfords, who must have one of the largest turnovers of these maps of any retailer, still display them in browser racks by National Grid number.

⁹⁴ OS EXperiment 367, minute 33A.

⁹⁵ Which replaced some of the Regular Edition sheets of 1956.

⁹⁶ See the 'new maps' column in *Sheetlines* 28-36.

⁹⁷ *OS News*, May 1992, p.11.

present the standard *Pathfinders* continue to be dogged by fundamentally the same problem as afflicted the Provisional Edition forty years ago: in terms of cost of square inch of map they are far more expensive than the 1:50,000.

At the same time there are rumours, which may prove to be no more than that,⁹⁸ but which are only too reminiscent of past experience of 1:25,000 history, that the less economic 1:25,000 sheets may wither away. The one certain outcome of this will be voluble protests, and a short-term solution might be to avoid revising the ‘uneconomic’ sheets. However, there is a longer-term problem which will have to be addressed if the series is maintained, and that is its digitisation. When the 1:25,000 was last threatened, in 1981-2, OS digitisation was proceeding at so slow a pace that it must have seemed irrelevant to the question; a solitary Second Series sheet, SO 29/39, had been produced in 1978-9 by digital derivation from 1:2500 data, and other digital 1:25,000 experiments have been made,⁹⁹ but these are memorable precisely because they are exceptional. But by 1995-6 all the larger scales will have been fully digitised, and all the smaller scales will be well advanced in that direction, if not completed. The 1:25,000 will thus be an anomaly, the only analogue OS mapping, calling for obsolescent techniques, and the question will be whether there is any way of digitising the map satisfactorily that is not disproportionately expensive in relation to the expected sales. The somewhat simplified style of the prototype Coastal Zone map may be an indicator of what is to come, and it may be that its style of uncased roads, buildings and woods will make friends amongst those who find the existing *Pathfinder* too elaborate a concoction;¹⁰⁰ but, if so, it will be necessary to restore the field boundaries, as they are the main justification for this scale *vis-à-vis* the 1:50,000.

Acknowledgements

That this article rests not only on documentary evidence freely accessible in the public domain but also on discussions with individuals will be apparent from the footnotes; I am also particularly grateful to David Archer, John Paddy Browne of the Cartographic Library, Ordnance Survey, and to Roger Hellyer for assistance of various sorts. All omissions, errors, misjudgements, indiscretions and other *faux-pas* are of course mine alone.

⁹⁸ See *Sheetlines* 35, p.2.

⁹⁹ Those known to the author are: the Bideford experiment, *circa* 1969-70; the Waterlooville experiment, *circa* 1975; and the Basingstoke experiment, *circa* 1982-3. Specimens of all three are in the cartographic library at Ordnance Survey.

¹⁰⁰ The comments of one prominent cartographic historian and Charles Close Society member were a good deal less kind!

Opposite page: An extract from 1:25,344 *Map of East Anglia* Sheet 85 N.E. (1914). This was one of the original sheets. Squaring on the map face is in black; contours are at 10 ft intervals.

This page: An extract from 1:25,344 *Map of East Anglia* Sheet 107 S.E. (1915). This is one of the later sheets, produced after the adoption of Egyptian lettering, but before the discovery that Middlesex and Kent are not usually regarded as part of East Anglia. Contours are now at 20 ft intervals, and the squaring is in red.

An extract from GSGS 2742 France, 1:20,000, Sheet 36c N.W., Edition 6, Ordnance Survey, 1916, including a selection of conventional signs. The original has outline in grey, water in blue, contours (at 5 metre intervals) in brown, woods in green, enemy trenches and other information in red and the British front line trench in blue. Note the railway symbol.

An extract from GSGS 2748, Sheet XII.O, (1920), printed at the War Office 1923, with the conventional signs. Note the railway symbol. Contours are at 5 metre intervals.

An extract from 1:25,000 GSGS 3906 Sheet 47/12 N.E., 'Drawn and Heliozincographed at the Ordnance Survey 1931. Printed at W.O. 1936'. In fact this copy is printed wholly in black, and probably dates from 1940-41. Note the street names, and compare with the 1940s civil map extracts on pp 26-7.

An extract from 1:25,000 GSGS 3906 Sheet 29/8 S.W., printed in 1940. This copy calls itself '2nd Provisional Edition'; in fact it was printed as part of the original Provisional Edition and was converted to a new edition by overprinting contours in brown which had been enlarged from the one-inch map.

An extract from 1:25,000 Provisional Edition Sheet 33/89 (1946). (Crown copyright.) This is in the 'original style'; whether it is MacLeod's original style or merely Cheetham's as as yet not clear. Connesieurs of cartographic silences will observe Aintree racecourse.

An extract from 1:25,000 Provisional Edition Sheet 40/09 (1945). (Crown copyright.) The 'later' style, though in fact this sheet was printed a few months before 33/89, illustrated opposite. Both have contours at 25 ft intervals.

An Ordnance Survey revision drawing confirming a local surveyor's plan

by John Garratt

The Ordnance Surveyors' Drawings at a scale of two inches to one mile in the British Library Map Library are a relatively unused source for local historians. While working on the life of a local surveyor, Charles Baker of Painswick (1791-1861), who laid out many new road schemes in the North Cotswolds, the opportunity arose to compare his plans for some of these schemes with the OS revision drawings. This was possible because the original survey and drawings for Sheet 44 (Old Series), Cheltenham, were made between 1811 and 1817 before the main growth of Cheltenham and the new road schemes had started. This made revision necessary before the sheet was published in 1828. The original drawings show the roads up to about 1816. The most interesting turned out to be in the area of Dowdeswell, east of Cheltenham, (BLML ref. Maps 176.o, sheet 44.12). A scheme had been proposed to make a new road avoiding Dowdeswell hill and Baker had surveyed a new line which was to become the present main road to Oxford and London. This was opened in October 1825. In the course of its construction a minor road near the top of the hill was closed. This required the deposition of plans of the closure agreed by two J.P.s. Several variants of these plans are in the Gloucestershire Record Office. The figure (opposite, above) shows the most relevant (GRO QS/Rh Whittington 1825 C2). Comparing this with the two inches to one mile revision drawing, made 1827-28 (opposite, below), it is interesting to see the way the surveyor has crossed out the closed roads. The new road, which here appears darker and bolder than do the other roads, is shown in red in the original. The discovery of this little drawing confirming the local plan gave a striking sense of affinity with the surveyor working in the field at that time.

(Sheetlines is grateful to the Gloucestershire Record Office and to the British Library respectively for permission to reproduce the illustrations opposite. We are also grateful to Andrew Teed of the Department of Geography, University of Exeter, for converting the photographs into a form suitable for monochrome reproduction.)

Puzzle corner

The answer to the puzzle 'On which Ordnance Survey map does a lighthouse appear on top of the Pennines?' (*Sheetlines* 35, p., 36), is 1:250,000 *Routemaster* Sheet 5, *Northern England*, at NZ 015418. The lighthouse symbol has been replaced by a more correct radio mast on more recent editions, but not before a good many atlases, derived from the *Routemaster*, included the surrealistic error. (The extract is Crown copyright.)

The answer to 'How many towns in London town?' will appear in *Sheetlines* 37.

The centres of England and Wales

by Colonel Sir Charles Arden-Close, F.R.S.

Two places in Warwickshire claim to be the centre of England, namely Meriden, where a stone cross is pointed out to the visitor as the exact centre of England, and Leamington, where there is an oak tree which has the same reputation. A post-card, with a picture of the oak, used, I believe, to be sold at Leamington. Now Meriden and Leamington are about 11 miles apart, and it becomes difficult for an inquirer into this curious, if useless, piece of information, to accept both centres as correct, unless indeed he comes to the conclusion that one might be the centre of England whilst the more westerly might be the centre of England and Wales. But I think that neither attribution is correct.

The following definition may be proposed: The centre of any country is that point through which any great circle will divide the country into two parts of equal moment; this of course on the assumption that the earth is a sphere. If the earth is to be treated as a spheroid of revolution, then, instead of 'any great circle' we must say 'any plane section passing through the normal at the centre'. But it will be sufficiently accurate in the following investigation to treat the earth as a sphere.

The usual way of finding the centre of a country is to cut out, in cardboard, or in thin metal, an outline of the country, and to suspend this outline map on a vertical surface from various points on its perimeter, and then to draw vertical lines through the points of suspension. The point where these vertical lines intersect will be the required centre. Or, instead of drawing vertical lines from each point of suspension, a vertical line may be drawn, once for all, on the vertical wall or surface, and its intersections with the perimeter marked. In this case it may be as well to reverse the outline-map and carry out the same process on the back, so as to eliminate the effect of any error in the supposed vertical line.

This process for a small country like England and Wales will give a reasonably good approximation if an atlas map on any usual projection is used: such a projection, for instance, as a conical projection with rectified meridians. But, clearly, as we are concerned with areas, an equal-area projection should be employed. Since we employ straight lines passing through the centre, in the investigation, it will be reasonable that these lines should represent great circles. Thus it will be best to employ the Zenithal Equal-Area Projection of Lambert, with the zenithal point at the required centre. But that is just the point that we want to find.

So it will be necessary to proceed by approximation. We can first find the approximate centre by using any atlas map, and then use that centre as the zenithal centre for our projection, which must be calculated. As a fact, a zenithal centre within a few minutes of the required point will give a substantially satisfactory representation.

In this particular case the writer first took the outline of an atlas map of England and Wales, and having cut out the outline in cardboard, obtained the centre in the way described above. This first, rough position, for England and Wales was: latitude $52^{\circ} 30' N.$, longitude $1^{\circ} 48' W.$

Then, taking the centre of a Zenithal Equal-Area Projection as being at $52^{\circ} 30' N.$, and $2^{\circ} W.$, the coordinates were calculated and an outline map of England and Wales was plotted on cardboard, the outline being taken by reduction from the Ordnance Survey 1/Million. The centre of England and Wales, as derived from this map came out at $52^{\circ} 32'.2 N.$, $1^{\circ} 46'.1 W.$

There is a useful way of testing the accuracy of the work by comparing the distances and areas of England and Wales from the combined centre. The separate centres of England and Wales, as derived from the same map, were:

England	Lat. $52^{\circ} 33'.7 N.$ Long. $1^{\circ} 27'.7 W.$
Wales	Lat. $52^{\circ} 24'.0 N.$ Long. $3^{\circ} 49'.5 W.$

Then, if the distance, from the combined centre, of the centre of England is b ; and the distance, from the combined centre, of the centre of Wales is a , $b \times 50,704 = a \times 7473$, these figures being the areas, in square miles, of England and Wales respectively. The area of England excludes the Isle of Wight, and the area of Wales includes Anglesey. Now measure the length ab on the plotted map, or on any map, and the position of the combined centre is easily found. This comes out, as below:

Centre of England and Wales, by the test: $52^{\circ} 32'.6$ N., $1^{\circ} 45'.8$ W.

But it would not be wise to trust to the measurements from one map. So, as an independent test, I took the Ordnance Survey 1 to 1 Million map, cut out the outline of England and Wales on cardboard, and started afresh. The projection of this map is neither equal-area nor zenithal, but it is not very far from being a perfect representation, the maximum error of scale along a parallel being 1:434. The meridians are everywhere their true length; one errorless parallel runs through the greatest thickness of country east to west, from Chelmsford, through Monmouth to Milford Haven. The southern parallel of maximum error is that of 50° N., which is mainly in the sea. In the north, the parallel of maximum error, of opposite sign, is at $55^{\circ} 45'$, at Berwick, where the east-west distance is very small. On the whole, no great error is likely to result from the use of this projection; what error there is will result in the latitudes of the centres being slightly too small. The longitudes will be hardly affected.

Proceeding in the same way as before, I find the following values for the centre of England and Wales:

From projection	$52^{\circ} 31'.5$ N., $1^{\circ} 46'.1$ W.
By calculation	$52^{\circ} 31'.4$ N., $1^{\circ} 46'.5$ W.

The following table gives all the results from the two projections:

THE CENTRES OF ENGLAND AND WALES AS DERIVED FROM MEASUREMENT ON TWO PROJECTIONS

<i>Centre of England</i>	Zenithal projection	$52^{\circ} 33'.7$ N. $1^{\circ} 27'.7$ W.
	Conical projection	$52^{\circ} 32'.5$ N. $1^{\circ} 27'.8$ W.
	Means	$52^{\circ} 33'.1$ N. $1^{\circ} 27'.8$ W.
<i>Centre of Wales</i>	Zenithal projection	$52^{\circ} 24'.0$ N. $3^{\circ} 49'.5$ W.
	Conical projection	$52^{\circ} 32'.5$ N. $3^{\circ} 50'.2$ W.
	Means	$52^{\circ} 23'.1$ N. $3^{\circ} 49'.9$ W.
<i>Centre of England and Wales</i>	Zenithal projection	$52^{\circ} 32'.2$ N. $1^{\circ} 46'.1$ W.
	By calculation	$52^{\circ} 32'.6$ N. $1^{\circ} 45'.8$ W.
	Conical projection	$52^{\circ} 31'.5$ N. $1^{\circ} 46'.1$ W.
	By calculation	$52^{\circ} 31'.4$ N. $1^{\circ} 46'.5$ W.
	Means	$52^{\circ} 31'.9$ N. $1^{\circ} 46'.1$ W.

As a final result it may be said that the centre of England *and* Wales will be not very far from lat. $52^{\circ} 32'$ N., long. $1^{\circ} 46'$ W. But this result may be a mile or so in error. The point is about 2 miles N.N.E. of Castle Bromwich, about 3 miles south-east of Sutton Coldfield, and 7 miles north-east of the centre of Birmingham.

As to the centre of England, taking this as being at lat. 52° 33' N., long. 1° 28' W., this point is on Watling Street, 4 miles E.S.E. of Atherstone, close to the railway bridge, between the villages of Higham on the Hill and Caldecote.

Although no minute accuracy can be claimed for this investigation, it is, I think, certain that neither Meriden nor Leamington is near the centre of either England, or of England and Wales; Meriden would seem to be some 10 miles distant from either centre, and Leamington about double as far.

(Reprinted from the *Geographical Journal*, 97 (1941), 179-81.)

[It will be recalled that there was a long-standing intention by this Society to reprint articles of Ordnance Survey interest from the *Geographical Journal*. Although much work was done, including gaining the necessary consent from the Royal Geographical Society, the project had to be abandoned on grounds of dubious viability. However, the editor of *Sheetlines* felt that at least Sir Charles Arden-Close's article deserved to be rescued from obscurity, particularly as the Ordnance Survey determined the centre of Great Britain by the suspension method in 1971, and it was found to be close to Stonyhurst, near Clitheroe in Lancashire. Following a request in 1988 from the OS's opposite number in France, the Institut Geographique National (who had calculated the centre of France as being close to the village of Vesdun, south of Bourges), the centre of Great Britain was recalculated by digital means, and the centre - reckoned as the centre of the mainland plus the 401 principal offshore islands - moved some nine miles north. 'I provide these facts not to fuel a number of rival claims to be "at the centre of things"... but to demonstrate that Ordnance Survey has left the "sticks and strings" era behind it, and that it thoroughly enjoys these occasional forays as the unqualified in full pursuit of the unmeasurable. But then if Ordnance Survey is not qualified, perhaps no one is.' (John Leonard, Director of Marketing, Ordnance Survey, in a letter to the *Times*, 4 December, 1991). In the same issue there appears a letter from Mr Martin Taplin of Guildford, summarising the 1941 article, and giving the National Grid reference of the centre of England as SP 367949. Commenting on the above, Mr Philip Atkins, the Librarian at the National Railway Museum in York, observes in a letter to *Sheetlines*:

'It is also interesting to establish the median point in terms of the UK's geographical mainland extremities. These are deemed to be:

North, Dunnet Head	Lat 58° 39'N
South, The Lizard	Lat 49° 58'N
East, Lowestoft	Long 1° 45'E
West, Ardnamurchan Point	Long 6° 03'W

This gives a median location of 54° 18.5'N, 2° 09' W which is very close to Hawes in north Yorkshire (54° 18'N, 2° 12' W).

'If one recalculates this to take into account the island of Ireland, regarding Sleat Head (10° 30'W) as its most westerly mainland extremity, one now arrives at a median point of 45° 18.5'N, 4° 22.5'W. This falls remarkably close to the 2034 ft summit of the mountain of Snaefell (54° 15'N, 4° 26'W) on the Isle of Man from which appropriately enough high points in England, Scotland, Wales, the Irish Republic and Northern Ireland are readily visible on a clear day.

'I do not recall ever seeing this fact having been quoted in print before.']

Reviews

J.H. Andrews, *History in the Ordnance Map: an introduction for Irish readers*, Kerry, David Archer, 1993, pp viii, 63, B4, pbk, ISBN 0 9517579 2 X, £7:50, or £7:90 by post from the publisher.

There are some fortunate writers whose name is practically self-recommending to some of the public, and Professor John Andrews is one of them. Although his interests - both in cartographic history and in other fields - are much wider, his name is synonymous with the study of the Ordnance Survey of Ireland in its first hundred years. The most substantial fruit of this work is *A paper landscape: the Ordnance Survey in nineteenth-century Ireland*, (Oxford University Press, 1975), but *History in the Ordnance map* is a by no means insubstantial companion. *A paper landscape* originated in a Dublin D.Litt. thesis, presented in 1971, whereas *History in the Ordnance map* was published in 1974 by the Ordnance Survey of Ireland, to mark its 150th anniversary. The booklet seems to have gone out of print fairly quickly, and has proved so difficult to obtain outside Ireland that for most potential readers it is in effect made available for the first time.

History in the Ordnance map opens with an admirable brief account of the development of the Ordnance Survey of Ireland during its first 98 years, follows it with a short description of the Memoir material (surely a nascent Geographic Information System?), and then goes on to discuss various aspects of the maps as historical sources. The bulk of the book consists of sections describing individual map-types, each section consisting of a page of text with a facing full-page illustration. Although the inspiration for the book was no doubt *The historian's guide to Ordnance Survey maps* by J.B. Harley and C.W. Phillips (1964), the end result is very different, and, I think, far more satisfactory. (Having just completed a 'concise guide for historians' on OS maps of Great Britain, I am in a good position to judge the worth of both works!)

This reprint gives us the text and illustrations of the original edition unaltered, and adds a new introduction and a bibliography. Although the latter includes a number of items which will be familiar to readers of *Sheetlines*, it also includes some material which is probably quite unknown outside Ireland. The size will probably be found to be rather more tractable than the original, being the standard B5 size. It will thus fit snugly next to Professor Andrews' *A paper landscape*, which remains in print, but at so high a price (£48 at the last report) that for most people it remains a book to borrow rather than one to buy. At under a sixth of that price *History in the Ordnance map* is a much more attractive purchase. Incidentally, for those who already have *A paper landscape* and are hesitating whether to buy the newcomer, let me say that there is remarkably little overlap between the two. There is also very little overlap with *An illustrated record of the Ordnance Survey in Ireland*, reviewed in *Sheetlines* 33.

Roger J.P. Kain and Elizabeth Baigent, *The cadastral map in the service of the state: a history of property mapping*, Chicago and London, University of Chicago Press, 1992, pp xx, 423, illus., 24 cm. hbk, ISBN 0-226-42261-5, £39:95 (\$49.95 in US, plus freightage).

British commentators and cheer-leaders have been so used to affirming that the Ordnance Survey is 'the best in the world' that the more sceptical amongst us have of late been asking the question 'On what grounds?'. The question has not been very satisfactorily answered hitherto, because of the paucity of secondary material in English, at any rate in a convenient form. It is possible that the projected final two volumes in the Harley and Woodward *History of Cartography* (to cover the nineteenth and twentieth centuries) will provide a complete answer, but meanwhile we have a very acceptable partial answer. Cadastral mapping is the mapping of property ownership, which, despite the recent attainment of compulsory land registration, is not conspicuous in the output of British official mapping, though it is in many other countries, developed and developing. Although it *may* be that the OS chart paper 1:2500 represents the zenith in terms of elaboration of presentation, it was a very late comer, and it cannot claim, either, what may be termed the profundity of much other superficially less dazzling mapping in other countries, in that it was not accompanied

by records of land ownership or use. (The ‘Lloyd George Domesday’ of 1910 is only a partial exception to this, and, anyway, the Ordnance Survey merely provided the base-maps, not the valuation information.) The much-derided tithe surveys of the 1830s and 1840s, though their cartographic shortcomings provided ammunition for supporters of the OS 1:2500, did at least include fairly comprehensive ownership and occupation information. Ownership information, at least, was a *sine qua non* in such cadasters as those of Sweden (started 1628), Denmark (1681), and, most notably, the Duchies of Milan and Mantua (1718). Although cadastral mapping is the real story here, there are occasional useful asides about derived mapping; thus the early eighteenth century Milanese 1:2000 mapping was used for parish maps at 1:8000 and a general map at 1:72,000. Also useful for correcting ethno-centric, or indeed more limited perspectives, are the mentions of open-field enclosure, for example in Sweden, Denmark, and parts of Germany.

The book is extensively illustrated (in monochrome), though many of the maps or extracts are at much smaller than the original scale. This may be regrettable, but having recently had to fit obligatory illustrations to spaces in a text, I can hardly complain about this. The publishers have done a good visual job. By the standards of certain cartographic history volumes from British publishers which have lately come to our notice the price is very reasonable. Would a British publisher have resisted the temptation to slap a little extra on, because the text won the 1991 Kenneth Nebenzahl prize for the best new manuscript in the history of cartography?¹

A. Crispin Jewitt, *Maps for empire: the first 2000 numbered War Office maps, 1881-1905*, London, The British Library, 1992, pp xxii, 511, illus., 25 cm, hbk, ISBN 0-7123-0272-7, £75:00.

It will be recalled that in 1988 Crispin Jewitt spoke in Edinburgh about this project, which was to list the maps covered by the first 2000 maps to carry a number in the sequence originally prefixed by IDWO (Intelligence Division, War Office), then by TSGS (Topographical Section, General Staff), and since 1908 by GSGS (Geographical Section, General Staff).² Most of the maps listed in this book appear never to have reprinted, and so only carried IDWO or TSGS numbers, but a minority lasted into the early 1950s, and duly bore the GSGS prefix.

Only those who have actually ventured upon a carto-bibliography know just how demanding an occupation it is, and how riddled with the knowledge that there is definitely ‘something, somewhere’ which obstinately refuses to turn up. Having a number system increases the misery; some three hundred IDWO/TSGS series are known to the compiler only by cryptic references in elderly handlists, and perforce skeletal details have had to be given here. For the rest, we have scale, title, authorship, printer, and size. Many of these maps were printed by the Ordnance Survey, and most of the others within the War Office, and for the first time we have some measure of the ‘outside work’ undertaken by the OS at this period. Missing from the lists is any indication of colour, which is unfortunate, as it might have given some idea of the spread of colour-printing in the late 19th century, but that hardly invalidates the work as a whole.

The book has been compiled from the holdings of the British Library, the Public Record Office and the Ministry of Defence, and it is unlikely to be superseded in a hurry. It is possible that a few of the gaps may be filled by chance survivals in private hands, university collections, or obscure PRO files (various ‘lost’ OS maps which have come to light in the past few years give cause for hope), but they will be mere details.

This is, then, a thoroughly worthwhile book, albeit with two blemishes. A minor one is the title, which may mislead some into thinking that this is a study of the mapping of the British empire,

¹ Your reviewer hastens to forestall the sort of snide comment which he so enjoys making himself, by pointing out that (a) he is working with Roger Kain on tithe and parish mapping in England and Wales, (b) that the tithe text will be published by Cambridge University Press (which will say much to some), and (c) this review is to be read ‘straight’ rather than ironically.

² See *Sheetlines* 23, p.19.

rather than just a catalogue. But that is trivial compared with the major blemish, which is of course the price. Perhaps I am naive and old-fashioned, but I have been under the impression that the object of publication is the dissemination of information. No doubt it could be claimed that this is a 'specialist' work, but who are the specialists who will buy it? Libraries? Possibly some may be misled by the title, but at £75 most of them will await reviews or reports. Private individuals? At £75 for 500 pages? I can think of a few members of the Charles Close Society who might want it, but I rather suspect that most of them are rather short of the £75 class.³

Such over-pricing is a disservice both to the author and to the public.

Tim Nicholson, 'Ordnance Survey ephemera, 1945-1991', *The Map Collector*, 59 (Summer 1991), pp 8-12.

This is a companion to the same author's article in *The Map Collector* 54 (Spring 1991), on pre-1939 OS ephemera. Post-war ephemera might be dismissed as either dull or as revoltingly modern, but there are some interesting things illustrated here, including the *Masterplan for the defeat of warts*, of which copies were given away with the original issue of *Sheetlines* 5, and which is both too good and too ridiculous not to be preserved somewhere. Bearing in mind the OS's 'safe', aloof image in the pre-Serpell period one is surprised to discover it using cartoons by Norman Thelwell, one of which is illustrated here. (Not illustrated or mentioned here are the *Wind in the Willows* cartoons of circa 1985-6, which combined artistic distinction with that blatant disregard for textual accuracy which is the inevitable doom of any popular author once the protection of copyright is removed. Kenneth Graham croaked in 1932; how Toad croaked fifty years and more later is better not dwelt on!)

The power of a good review

Following the favourable notice of *The Greenwich Meridian* in *Sheetlines* 34, this pamphlet almost immediately went out of print. Conversely, *Placenames on maps of Scotland and Wales*, reviewed in *Sheetlines* 33, with a complaint about the price, remains obstinately available.

Richard Oliver

Ian O'Brien draws our attention to a recent article and a recent booklet:

A.S. Macdonald, 'Air photography at Ordnance Survey from 1919 to 1991', *Photogrammetric Record* 14 (80), pp 249-60, (October 1992)

Among the illustrations there is a reduced-scale extract from the *Air Map of Salisbury* of 1919. Other articles in the same issue make reference to the extensive German World War II photography of England, and parts of Wales, now held in Washington, D.C., which underlines the futility of many of the security measures described by Chris Board at the 1992 CCS AGM.

Alastair Penfold, *An introduction to the printed maps of Hampshire*, Hampshire County Museum Service, 52 pages. (No date or price quoted, but I was charged £3 by Alton Museum.)

It includes a brief description of OS series, including a paragraph headed 'One Luck Series'!

³ Those readers who are fellows of the Royal Geographical Society may like to note that the R.G.S. has a copy, which was used for this review. Incidentally, there is such a thing as *photo-copying*, which I understand had a devastating effect in a once mighty country, now rather fragmented, apprehension of which in the late nineteenth century generated several of the early IDWO maps. One seems to recall something about history repeating itself once as tragedy, once as farce...

Extracts from Ordnance Survey 1:50,000 Sheet 113, showing the revision around Spurn Head. The extract on the left is from edition A/**/* (revised 1975, published 1987), and that on the right is from edition B (revised 1991, published 1992). (Both extracts are Crown Copyright).

New maps

Ordnance Survey of Great Britain

New publications between 1 November 1992 and 31 January 1993 included:

Conventional paper maps:

1:25,000 *Pathfinder* (Second Series), first publication: 501, edition A (formerly published as two separate sheets, NU 29 and NZ 20)

1:25,000 *Pathfinder* (Second Series), revised map: 197 (NJ 43/53) (edition B).

1:50,000 *Landranger*, Second Series, revised sheets: 107, 113, 120, 192 (all edition B).

British Isles Communication Wall Map, (1:1,000,000; £2.99). Includes whole of Ireland and part of France.

Digital mapping: Superplan: from 4 January 1993 all Limited Superplan areas are now converted to full Superplan coverage.

1:10,000 raster data will be available by May 1993.

Ordnance Survey of Ireland

1:50,000, Provisional Edition: Sheets 71 (*Tralee*), 79 (*Cork-Kerry*).

Sheet 71 appears to be identical in specification with Sheet 70; Sheet 79 drops 'G.S.' from Gardai Station symbol, and the note re N-road numbering is dropped from legend.

The Godfrey Edition

Between 16 December 1992 and 4 March 1993 coverage was extended to the following: Bathgate; Bradford on Avon; Hendon Aerodrome; Hyde (Cheshire); Linlithgow; Newbiggin by the Sea. The highly recommendable Swindon group is now complete, and publication of Buckinghamshire is about to start. Northumberland 65.10 (Newbiggin 1898) has One-inch Third Edition (outline, small sheet series) Sheet 10 on the rear; Wiltshire Sheet 15.07 has New Series first edition Sheet 252 on the back. Middlesex 11.02 (Burnt Oak and Hendon Aerodrome 1935) is also strongly recommended, and will confound those who normally hold aloof from the study of map covers.

Map review

1:50,000 England and Wales Sheet 90, *Grimsby* (including Sheet 91 *Saltfleet*), Solid and Drift Edition, Southampton, Ordnance Survey, for British Geological Survey, 1990, £8:50. [No ISBN available.]

1:50,000 *Landranger* Second Series Sheet 113, *Grimsby and Cleethorpes*, edition B, Southampton, Ordnance Survey, 1992, ISBN 0-319-22113-X, £4:25.

1:50,000 *Landranger* Second Series Sheet 192, *Exeter and Sidmouth*, edition B, Southampton, Ordnance Survey, 1992, ISBN 0-319-22192-X, £4:25.

Readers of *Sheetlines* may be forgiven for wondering whether, having had my say on current topographical mapping at great length in *Sheetlines* 34,¹ I am not abusing the privilege of editor by finding some more to say on essentially the same subject, particularly as I was born in Grimsby and at present reside in Exeter. This accusation cannot be completely denied, but whereas previously I was concerned with what the maps contain or might contain or how they should colour themselves, here I am more concerned with something which before was hardly hinted at: the map as a historical document.

¹ Richard Oliver, 'As they are and as they perhaps might be: some recent maps', *Sheetlines* 34 (September 1992), 48-60.

To start with the map which will either raise the biggest enthusiasm or the biggest yawns. Geological mapping may not seem ‘historic’ unless by the accident of being (as it so often is) on an obsolete topographical base, but in fact it is. ‘This map gives an interpretation of data available at last date of survey’,² says an inconspicuous little note inside the border at the south-west corner of the map. Though, subject to the pinpricks of extractive industry, coastal accretion, and other changes that are locally important and globally insignificant, the rocks beneath us do not change, understanding and classification of them does. Differences between the Old Series one-inch geological maps and the sheet under review are the result of a century’s development in earth science, of a different view of facts, some the same, some added by new investigation, not of changes in the subject matter *per se*. Thus we have a map which is as likely to get ‘out of date’ as any other.

The map ought to appeal to a wider audience than its subject or its area might suggest, in that it includes information of interest to historians of the landscape. Particularly striking are the extensive ‘Saltern mounds (waste tips of the mediaeval salt industry)’ along the coast, and there are other indications of ‘made ground’ and abandoned adits; these indications are numerous in a district which I suspect is not much endowed with either. The mapping of the salt-tips makes one eager for the publication of Sheet 116, which covers the Roman and mediaeval salt-districts around Ingoldmells and Wainfleet, which are much better known than those between Grimsby and Saltfleet.

But will Sheet 116 ever appear? The 1:50,000 geological maps are the continuation at a larger scale, but in the same archaic sheet lines, of the 1:63,360 geological New Series, which began publishing, I think, in 1893, and which are still only about half complete. I have waited twenty-five years for Sheet 90; how long must I wait for Sheet 116? One reason for the delay, I understand, is the difficulty that the British Geological Survey has in recruiting sufficient qualified geologists to undertake the necessary 1:10,000 field survey, and, like OS, BGS is under pressure to recover its costs. No doubt there is something in this, but the real problem seems to be a lack of vision. Sheet 90 is based on field mapping of 1980-85, but another Lincolnshire sheet, 114 *Lincoln*, is a Provisional Edition, based substantially on the nineteenth century 1:63,360 survey. It takes, I think, no great feat of imagination to suggest that the 1:50,000 could be completed very quickly were the gaps in modern 1:10,000/10,560 re-survey to be filled by re-use of 1:63,360 survey. Nor, having thought of that, does it take much imagination to suggest that sheet lines which have their origin in the adoption of the Delamere meridian *circa* 1839 might with advantage be replaced by those of the OS 1:50,000 *Landranger*.³ It will no doubt be objected that the geological maps sell to a small and highly specialised audience and that therefore there is no point in departing from a well-tryed arrangement. Well-tryed; and trying. It is worth seeking out Sheet 90, if only in a library or a bookshop,⁴ and seeing just how visually attractive modern BGS mapping is, particularly if your acquaintance is largely confined to older examples of the *genre*. Apart from the base-map (of which more anon), everything is presented with the greatest lucidity. As well as the map, and various vertical sections, there are diagrams of Pre-Holocene geomorphology, Structure Contours on base of Chalk, and Rockhead contours. Thus there is far more to this map than merely discovering, say, that one’s

² It ought to be pointed out here that, though the actual placing of the geological lines on a new ‘re-surveyed’ sheet such as that under review is the result of recent field operations, the final result takes account of nineteenth century work in a way which OS topographical re-mapping would not; thus the work of both nineteenth and twentieth century geologists is credited on the map.

³ Meanwhile, it would be a step in the right direction if the back cover indexes of the published maps showed the actual sheet lines instead of some of the absurdities inherited from a Victorian OS parent. Are we *really* supposed to believe that sheets such as 82, 92, 192, 344 and 345 will one day be published as separate entities? To be fair, the adjoining sheet diagram on the face of Sheet 90 shows 81 and 82 as a combined sheet, though one wonders whether it was quite necessary that Sheet 82 receive a name, *Kilnsea Warren*.

⁴ Not, I suspect, the easiest thing to do; there was a delay of eighteen months to two years between the publication of flat and of folded copies of this sheet.

sometime place of abode stands on glacial till overlying Burnham chalk. Granted that some of these refinements are only possible with complete resurvey, surely their attainment would be much facilitated were the geological maps to sell more widely, and be in more familiar sheet lines.⁵

The geological maps would also, I think, sell better were the base-mapping to be improved. This is partly a question of legibility and partly one of obsolescence. Sheet 90 exemplifies the long-standing practice of printing the geological information in black, and the base of National Grid, topographical information and contours in very light grey. The base elements (except, of all things, the contours, which look like plate blemishes rather than a geological adjunct) are legible enough when overprinted lightly, but are liable to vanish under the heavier colours; thus the interested lay person has difficulty in matching the familiar landscape, or that on a topographical map, with that *interpreted* by the geologists. In fairness, it must be added that the question was studied some years ago,⁶ but unfortunately no improvement has resulted. If it did, then geological maps might be more than the preserve of the few, sold at fancy prices.⁷

Mind you, it might be asked whether the base-map is worth troubling with. One replies at first in the affirmative: it is based on the OS 1:50,000 Second Series; surely it could not be more up to date? Well, it could; even allowing for the unavailability of the B edition of *Landranger* 113, one might have expected a geological map published in 1990 to have availed itself of the A/**/** edition of Sheet 113, published in August 1987, rather than (as admitted here) the A/**/* edition, of June 1985. Lest this appear to be pedantic local patriotism allowed to run wild on account of the exiguousness of editors, let it be added that A/**/** adds three housing estates around Grimsby, inhabited, one does not doubt, by potential map purchasers. And the base-map is printed so lightly that these housing estates wouldn't trouble the geology in the least.

Still, perhaps all these housing estates are as green fields under bricks and mortar. As a collector of the 'B' editions of the 1:50,000 Second Series as they have been published,⁸ I have to say that the most depressing thing about them is the evidence they offer - quite a lot of them - of building expansion. Those cognisant of my personal circumstances may suggest that there is some cynicism involved here, but if so, then it is deep-rooted, and in Sheet 113 (or Sheet 105, as it was in those days and scale). On the other hand, I don't wish to live in a fool's paradise, of misleading open spaces shown on a current map where in fact there are none. The map is but the expression, not the cause, of the malaise.

At one time, 'intermediate revision' of 1:63,360 and 1:50,000 mapping excluded new building development, notwithstanding that such could have been supplied readily from 1:2500 and 1:1250 scale mapping. That policy was changed some years ago, as exemplified by the additions to Sheet 113, A/**/**; perhaps someone realised that the information would have to be added anyway as each sheet underwent full revision, and that housing estates contained map-buyers, who in a world of Full Cost Recovery ought not to be unnecessarily frustrated. There is therefore rather less contrast in building expansion on the B edition of Sheet 113 compared with edition A/**/** than there was comparing the A edition with the First Series predecessor, which included the peculiarity of adding (to 1:63,360 material revised in 1960) the oil refinery at TA 158178, but not the housing estate at TA 241099, notwithstanding that the latter antedated the former. Though it would have been possible to prepare a A4 edition of Sheet 113, showing the fruits of further 1:1250 mapping, a B edition was at

⁵ This might also save the potential embarrassment, should the pace of coast erosion in Holderness not slacken its pace, nor that of 1:50,000 geological publication be increased, of Sheet 82 being rendered unnecessary.

⁶ Richard J. Phillips and Liza Noyes, 'An investigation of visual clutter in the topographic base of a geological map', *Cartographic Journal* 19 (1982), 122-32.

⁷ And in the case of the 1:250,000 series, *fanciful* prices: TWENTY POUNDS *per sheet!!!*

⁸ Although I refer to them here, and they seem to be informally referred to thus in OS circles, as 'fully revised', the 'new letter' editions of the 1:50,000 are described simply as 'Revised 19xx' on the maps themselves; 'Fully revised' and like phrases were used between about 1944 and 1970, and were presumably dropped so as to blunt the sort of criticism which follows in this review.

the least desirable to show other changes. It would not strictly have been necessary to get Grimsby Dock Tower added (TA 278114; built 1852, but only now making its small-scale debut), nor to show the old church tower at TF 436899 as something ecclesiastical (it is correctly shown thus on Sheet 122), but it would certainly be desirable in order to do something about the road classification. The latter is improved, but leaves scope for still further improvement. Apart from the unclassified road with a B-number, (at least, that is one explanation for the apparent *faux-pas* at TA 267088), the dead-end yellow roads still call for attention, more particularly on the east side of the A.1031 between Marshchapel (TF 3599) and Grainthorpe (TF 3896), where the 1:63,360 New Popular Edition (Sheet 105) is a more reliable guide.⁹ The same eccentricity afflicts Sheet 192, where the dead-end road system is now correctly shown around Nether Exe (SX 9399, etc) and the deterioration of the road from Shillingford St George towards Kennford is duly taken account of (SX 906878 to SX 988876), but what is one to make of the situation at SX 982939? The roads leading west to SX 973939 and south to 983935 are both tarred; on edition A2 both are shown as uncoloured, but on edition B only that running west is coloured! Until OS is more consistent in its depiction of minor roads, the maps will be debased both as a historical source, and, of more immediate import, as a guide to travellers.

These may be nuances, but as OS makes its living by nuances, so must it be judged. Nuances are also to the fore in the mapping of the coast. About a year ago the customary note, which had appeared on the 1:63,360 and 1:50,000 since the early 1960s, as to the date of survey of low water mark (of legal importance, as it defines the extent of the realm) quietly disappeared.¹⁰ One is thus left in the dark as to when the tide lines were surveyed. On Sheet 193, comparing edition A2 (1991; low water mark plotted from air photos of 1957-69) with edition B ('Revised 1991') there has been thorough revision of low water mark but not high water mark in the Teign estuary (SX 8872-9372); in the Exe estuary there has been some revision of high water mark at Dawlish Warren (SX 987797), but that is all. I have some difficulty in believing that either the Exe Estuary or, off its mouth, the (unnamed) Pole Sand (SX 999795) have remained unchanged for so long, particularly in view of the acknowledged changes in the Teign estuary.¹¹ Estuaries ain't stable. East of the Exe the coast remains unchanged, but I doubt whether a thorough revision would have been worth the trouble.

The Humber estuary and, to the north, Holderness are certainly worth the trouble, and by and large OS have taken it. This is apparent both on Sheet 113 and on Sheet 107 to the north (published simultaneously), where the two metres a year loss on the Holderness coast and the gains and losses on that of Lincolnshire are, mostly, faithfully recorded, even the slight change in the 'hook' at TA 349151. Where things start to go adrift are in the vicinity of Spurn Head, as shown in the illustrations on page 36. Roughly to the north of northing 420 both high and low water marks have been revised; south thereof, and continuing all the way round the coast back to northing 420 on the north bank of the Humber, low water mark has been revised; high water mark has not. Inside the estuary, west of Kilnsea, probably little harm is done, (though one is suspicious of the apparently unchanged situation around TA 336186, where in the past accretion has been considerable), but around Spurn the situation depicted is impossible. Having visited this coast recently, allow me point out the deficiencies. (1) At Easington the road to the cliff at TA 407188 has been considerably foreshortened by erosion. (2) At TA 413173 the strip of land between the sea and the lagoon is much narrower; conversely, the foreshore beyond is rather wider than it is shown here. (3) The lane shown here

⁹ The plea that these *might* be roads not maintained by the local authority hardly answers, as several have Lindsey County Council signposts!

¹⁰ One wonders if this has anything to do with a correspondence between your reviewer and OS in the summer of 1990. I wrote, pointing out the omission from the recently published B editions of 1:25,000 *Pathfinders* TA 20/30 (720) and TA 21/31 (708) the date of low water mark survey, and received a reply, *inter alia*, that this was not thought of general interest. Perhaps someone feared that I would write back, demanding to know the logic whereby this information was evidently judged of interest to 1:10,000 and 1:50,000 users, but not those of the intermediate scale, and decided that it would be least troublesome and most logical were the dates to be omitted from the 1:50,000!

¹¹ Changes in the Teign and Exe estuaries do not affect the extent of the realm, but those of the Pole Sand do.

terminating at TA 414169 does so somewhat to the south, and loses itself in drifting sand; no drifting sand is indicated on edition B. (4) At TA 418160 the line of the cliff (here eroding at perhaps 3-4 metres per year) is correctly shown, but no corresponding adjustment is made to high water mark. (5) At TA 422147 there is no hint of the considerable erosion in recent years, which has caused the road (shown as uncoloured, presumably because it is privately owned, though it is concreted) to be moved westwards twice in fifteen years, and where, should Spurn Head become an island, the necessary breach will most likely occur. (6) No account is taken of the lurch westwards of high water mark SE of the old lighthouse (SE 403112), which is very marked on the ground.¹² (7) Though one is glad to see the 1852 low lighthouse shown at last (TA 402112),¹³ either it or high water mark need to be moved; it stands in about 2 metres of water at high tide. Bearing in mind that low water mark has been so carefully revised, it is difficult to see why high water mark has not been treated similarly, particularly as both must appear on the same set of air photos. The end result is a subtle but serious failure; at its supreme test, Sheet 113 is found wanting both as a guide to contemporaries and as a historical document.

Admittedly, there is a great difficulty in that there is a conflict between what is desirable historically - that is that the whole sheet is revised as an entity - and the desire of contemporary users for the minimum of discrepancy between cartographic and perceived realities, which tends to lead to maps containing information surveyed over a range of dates. A recent Ordnance Survey information paper suggests that in future the emphasis of 1:50,000 will shift from full revision to selective revision, supposed to be more in line with what users want. In the past four years, revised 1:50,000 sheets have been flooding out, and though this may be justified for sheets such as 107 and 113, which were amongst the earliest to be converted from First to Second Series, in 1977, (though it would be better justified were the revision of high water mark more thorough), for sheets such as 192 and 200-204 (published 1982-3) the justification is more questionable. Certainly, urban development should be recorded, but 1:1250 and 1:2500 continuous revision will supply that; certainly, there should be a better correlation between tarred roads and yellow infill, but that might be supplied by a rapid revision. If what has befallen Spurn Head is what we can expect of 'full' revision, we may yet run crying to 'selective revision'.

Where does that leave high water mark? Is revision ebbing?

Richard Oliver

'Catalogue cartes anciennes'

I am indebted to my newly-acquired sister-in-law, Margaret Oliver, for supplying me with a leaflet with this title produced by the French national mapping agency, Institut Géographique National, advertising various 'old maps' which they can supply. This includes both the *Carte de Cassini* of 1744-93 at 1:86,400 and the *Carte d'Etat-Major* of 1818-81 at 1:80,000, (the leaflet is worth having for the indexes to these alone), as well as Visscher's *Plan de Paris en 1618* and a number of eighteenth and early nineteenth century official French topographical maps at scales of between 1:14,400 and 1:345,000. The leaflet looks quite mouth-watering, especially as it seems that most of the maps are pulls from the original copper plates. There is but one thing lacking: *any statement of price*. If anyone knows anything about this, perhaps they would advise the Editor of *Sheetlines*.

R.R.O.

¹² Incidentally, the lighthouse went out of use in 1985, but this development went unacknowledged on edition A/*/*/*; which makes one wonder why the distinction between lighthouses in and out of use was made in the first place.

¹³ It may have been omitted in the past (from maps prepared after *circa* 1914) as it was used as an explosives store, for blowing up wrecks.

A letter *to* the Editor

Dear Editor,

I have read several works written by you and every issue of *Sheetlines* since No.1. I am therefore quite used to, and often amused by, your literary style. However, I have to say that your 'Letter from the Editor' in *Sheetlines* 35 left me quite bemused by its opacity.

If it is, as I began to suspect after several re-readings, a plea for the continuing existence of the 1:25,000 series, this would be much better stated directly. A clear statement of the arguments that you, or the Charles Close Society, want to make in defence of the series could be of considerable value. However, it seems to me that the arguments would need to be based on the relative values of, in dense urban areas the 1:25,000 as against the 1:10,000, and in open rural areas of the 1:25,000 as against the 1:50,000. The case for the 1:25,000 in tourist or walking areas such as Gower is easily made and is tacitly accepted by the existence of the Outdoor Leisure Series.

I hold no brief from OS, and there is a good case to be made, but it will not be made by 'clever' comments and in-jokes.

Yours sincerely

ANDREW TATHAM

Keeper, Royal Geographical Society, Kensington Gore, London, SW7 2AR

12 February 1993

A letter *from* the Editor

Dear Readers,

I have printed the letter above not least because I have not received the volume of criticism and complaint from readers of *Sheetlines* 28 onwards which that hapless organ has probably deserved! As the question of 'opacity' has been raised, it must be answered.

The 'Letter from the Editor' in *Sheetlines* 35 was deliberately written in a slightly obscured way - though hardly *that* obscure to an U.K. resident, I should have thought - for two reasons: it touched on politics, and it dealt with information of uncertain status.

Most readers of *Sheetlines* will be aware that its publisher, the Charles Close Society, is a registered charity; and charities must not dabble in politics. They will also be aware that Ordnance Survey is a government body, and as such is automatically part of the political process, whether we like it or not.¹ This often places commentators in a difficult position, and to say candidly what one thinks² might cause questions to be raised as to the Society's charitable status. Does not opacity have its points?

The information had 'uncertain status', in that it was a rumour which reached me in such a way as to suggest a sufficient degree of plausibility, but I could not announce any scheme to allow some 1:25,000 *Pathfinders* to wither away as a definite act of policy, nor was I prepared to pass off as creative imagination on my part something which I was prepared to accept as logical and plausible, but did not have the ability to invent or deduce. (Fact is always stranger than fiction!) Nor, in the time available, was it possible to get a comment through official channels. But I felt it to be in the

¹ I understand that in the answers to the recent survey of Charles Close Society members there have been one of two comments on the 'politicisation' of *Sheetlines* under my editorship: but it is impossible to touch pitch and be defiled.

² For example, that were Ordnance Survey to be privatised it might be handed over to some corporate donor to the funds of a certain political party, rather than be sold openly, with the danger that the shares be sold to small investors, who might raise awkward questions at an annual general meeting as to why, say, complete 1:25,000 cover was not being maintained.

public interest to mention this rumour, (partly, I must admit, in the hope that it would eventually lead to an official denial), and, having a position of petty power (than which there is nothing more oppressive), proceeded to exercise it. Being a historian, I will not use the moronic phrase ‘history will judge’; retention of the 1:25,000 *Pathfinder* as a national series will be acknowledgement enough.

By coincidence rather than design (my other commitments have delayed its appearance for a year), this issue of *Sheetlines* contains an account of the development of the OS 1:25,000. Partly for reasons of length, and partly because of the availability or otherwise of material in the public domain, it concentrates mostly on events before *circa* 1960, and for this reason it is described as ‘episodes...’ A complete account must await the publication of a monograph on the subject, but I think there is enough here to show from whence the 1:25,000 arose, and who bears responsibility. It is not the only map which the OS has made with a less than clear remit, and, given its unpopularity in the past, it has ‘come on’ remarkably, and attempts to reduce the extent of its cover would disregard fifty years of experience. Once the principle of cross-subsidy is eroded, the supposedly ‘profitable’ parts of the operation start to wither away.

The arguments for retaining a national 1:25,000 I believe to be as follows:

(1) It is the smallest scale at which field boundaries can be shown clearly. Although the 1:10,000 admittedly shows them more clearly, the larger scale is financially out of reach of most of us, and, even setting that aside, the sheets cover too small an area to be useful. Although the 1:50,000 shows all but the most minor of paths and public rights of way, a great many map users do not have sufficient skill to be able to navigate without plenty of collaborative detail. Along a road, there is no problem; across an open field or moor, there is. Walking is a popular pastime, and with the growth of ‘green’ consciousness may be expected to grow.

(2) For built-up areas the 1:25,000 permits building morphology to be shown in a way which is not possible at 1:50,000. As with field boundaries, this information may indeed be conveyed more clearly by the 1:10,000, but the 1:10,000 is too expensive.

(3) Although at present the 1:10,000 is an orthodox printed map, in a few years’ time it may be expected to be produced by ‘Superplan’ methods, which are better calculated towards a high-cost customised map, than a low-cost mass market map.

(4) Almost every European country has its 1:25,000 or 1:20,000 series. Britain’s claim to be ‘the best mapped country in the world’ is already potentially tarnished by the lack of a comprehensive *ad hoc* 1:100,000 or 1:125,000 map; it will be further tarnished should the 1:25,000 go into decline. Arguments about ‘Superplan’ and the great digital database of which it is the mouthpiece are irrelevant outside Great Britain; a country is judged by its topographical, not by its cadastral maps.

(5) The 1:25,000 *Pathfinder* represents a considerable investment, both directly in the capital cost of drawing it, and indirectly in the 1:10,000, 1:2500 and 1:1250 survey information on which it is mostly based. Whatever progress is being made towards ‘full cost recovery’, that is merely recovery of year-to-year costs: it does not take account of the large past subsidy by the taxpayers of this country. To deny them the 1:25,000 map is to take their money and give nothing in return, and in any argument about the future of the 1:25,000 this must not be lost sight of.

In conclusion, I wish my successor as editor well, and trust that any brickbats resulting from this Letter will be addressed to me and not to him.

Richard Oliver
University of Exeter
5 April 1993

Notes, queries, answers and editor's jottings

1:25,000 First Series maps showing public rights of way

Following the query in Sheetlines 35, Michael Holroyd writes:

Bob Parry asked about First Series (Provisional Edition) 1:25,000 maps showing rights of way. The Salop, Gwynnedd and West Yorkshire maps appeared in 1976-77. I was covering OS matters for the Ramblers' Association at the time. We had been pressing for faster production of the Second Series 1:25,000s showing rights of way, then appearing at about 35 a year, and had suggested as a second-best solution adding rights of way to the First Series. The Second Series was speeded up to over 80 a year from 1975, but West Yorkshire Metropolitan CC asked the OS to add rights of way to the First Series map for Todmorden (SD 72). The Council supplied the information and paid for the overprinting, and the map appeared in March 1976, sold by the OS in the same way and at the same price as other First Series maps.

The OS offered the same deal to other county councils but apparently only Gwynnedd and Salop (as it then was) accepted. As these maps were not new OS editions they were not at first shown in the monthly Publication Report, but after prompting by the RA a total of 12 were mentioned in issues 5/77, 6/77 and 7/77. Besides those listed in *Sheetlines* these included Gwynnedd SH 52, 53, 74, 83. SH 61 and SN 69 were said to be 'in preparation', (I think in *Map News and Review*); SN 69 is mentioned in *Sheetlines*, so it seems probable that SH 61 also appeared. This would make 14, and there could well be others.

The copy of TQ 34 with rights of way overprinted in purple and green and numbered is evidently a sheet of Surrey County Council's definitive map of rights of way. Definitive maps were usually overprinted on 1:25,000 or 1:10,560 OS maps and several coloured or monochrome notations were prescribed by Statutory Instrument. The coloured overprinting was, I believe, done by Cook Hammond and Kell, not the OS. Some county councils (including Surrey) sold copies of their definitive maps to the public.

(Brian Dobbie writes to confirm that SH 61 was indeed published. The known overprinted First Series sheets are therefore SD 72; SH 52, 53, 61, 62, 64, 71, 72, 74, 83, 93; SN 69; SO 49, 59. It would be useful if readers could notify the editor of any other 1:25,000 First Series / Provisional Edition sheets overprinted with public rights of way information.)

Concrete monstrosity latest

A troop of Yorkshire scouts has offered to look after 100 redundant OS triangulation pillars 'to thank the OS for its maps'. 'Not everybody agrees the points should be protected. Jim Martin, chairman of the Dartmoor Preservation Society, has a deep dislike for the one on Bellever Tor, near Princetown. "I believe it's a monstrosity. We ought to get rid of those in national parks. There is always somebody wanting to adopt something. If you had a dog with five legs they would want to adopt it."'¹

Financial news

Following the announcement in *Sheetlines* 35 of the auction of a block of twenty OS bi-centenary stamps misprinted with 26p instead of 28p value, *OS News* 128 reports that they were sold for £23,000, 'not bad for a £5:60 investment'. One wonders whether a privatised national mapping agency will offer such a good return on capital.²

¹ Observer, 17:1:93; *Sheetlines* is grateful to David Webb for drawing attention to this.

² The outgoing Editor of *Sheetlines* has a block of twenty OS 200 39p stamps. If anyone is interested in removing the stamps from a cardboard box, erasing the postmarks and altering the face value, perhaps they would contact Richard Oliver, who will be glad to discuss terms, and how to split the anticipated loot.

One-inch Seventh Series mis-coverings

Mr P.R. Addiscott reports a copy of One-inch Seventh Series Sheet 160, B/* (1968) in an H99 cover for Sheet 170, and your Editor has a copy of Sheet 146, edition B (1968) in an H99 cover for Sheet 156. Your Editor also has a copy of Sheet 146, edition B, in a H132.1 cover, where the cover has been attached to the first fold in from the left, instead of to the left edge of the map! Have any readers come across any other mis-coverings of this sort?

Alternative formats for alternative users

Following Richard Oliver's comments on the possibility of an OS 1:50,000 database being used to generate a 1:100,000 cycling series (*Sheetlines* 34, p.60), Ian O'Brien remarks that in Switzerland 'the cartographic publishers K mmery & Frey are producing a new 1:60,000 tourist series in parallel editions for walkers and cyclists, evidently, judging from appearances, using automated rather than conventional procedures. These maps certainly make [the] point that given a comprehensive database there is no reason why a particular user group should not be served by maps at an appropriate scale (and specification) for their needs. As these maps sell at something like £10 each there is evidently money in it for someone.'

Six-inch 'First Edition without Contours'

More than one reader has written to ask what this is, and where it fits into OS six-inch (1:10,560) development. Until 1882 all six-inch sheets were full sheets, 36 x 24 inches within the neat line, engraved on copper, (except for some Scottish islands, for which the sheets were zincographed). In 1882, to expedite six-inch publication, direct photo-reduction from the parent 1:2500 was introduced, and the results published as 18 x 12 inches quarter sheets. (The cameras in use at the time could not conveniently reduce sixteen 1:2500 sheets to 1:10,560 in a single operation.) It was thus possible to publish the six-inch as soon as the 1:2500 was ready, rather than with an interval of several years, as had hitherto been the case. However, contouring work was lagging behind, and thus it was usual in the quarter-sheet counties (see next item) for two 'first editions' of the quarter sheets to be published, 'First Edition without Contours', and, later, an edition with contours (and without an 'edition name'). In theory the only difference between the two should be the addition of the contours, but if any readers have found definite topographical changes made to the contoured edition, it would be useful if they would write in.

Six-inch first edition publication in Great Britain

It has been said many times that in 1882 the OS *abandoned* six-inch full sheet publication in favour of quarter sheets, but this is not wholly true. After 1882 publication by quarter sheets was only resorted to, first, in those counties where no six-inch mapping had been published at all, and, second, in those counties where some six-inch mapping had been published some years earlier, as a result of limited areas in those counties being surveyed 'out of turn' for military purposes.

The lists below indicate, it is thought for the first time, which counties were published in which style. It also lists those counties in Scotland where the six-inch was published in zincographed full sheets.

It should be noted that although no instance is known of a photo-zincographed quarter-sheet being published in any other form, the engraved full sheets were sometimes printed by making a transfer to zinc, and printing by zincography. This practice seems to have been particularly favoured between *circa* 1879 and 1890, and was adopted both for counties which had been published for some time (e.g. Surrey), and counties appearing for the first time (e.g. Hertfordshire). Sometimes sheets adjoining a county boundary, with the portion outside the boundary blank on the engraved original, were completed by transferring the necessary portion of the mapping of the adjoining county.

Unlike the case with the one-inch maps, it does not seem to have been the usual practice to make electrotype duplicates of the six-inch copper plates. This gave rise to apparent oddities along some

county boundaries (e.g. Middlesex / Hertfordshire and Berkshire / Wiltshire), where one county was surveyed much later than the other. The usual procedure was to engrave and publish the first county, without waiting for the second county to be mapped; once the latter was ready, its portion of the plate was engraved, but, as there was only one plate, the plate was liable to be printed from with the second county only partially engraved. Examples of these partly-engraved maps are unusual, but a few are known in private collections, and there are probably others to be found in local record offices and the like.

Counties for which the whole county was published in engraved full sheets: Aberdeen; Ayr; Banff; Berkshire; Berwick; Buckingham; Bute; Caithness; Cheshire; Cumberland; Denbighshire; Dumbarton; Dumfries; Durham; Edinburgh [Midlothian]; Elgin [Moray]; Essex; Fife and Clackmannan; Flintshire; Forfar [Angus]; Glamorgan; Haddington [East Lothian]; Hampshire; Hertford; Inverness; Kent; Kincardine; Kirkcudbright; Lanark; Lancashire; Lewis; Linlithgow; Isle of Man; Middlesex; Monmouth; Nairn; Northumberland; Oxford; Peebles; Perth; Renfrew; Ross and Cromarty; Roxburgh; Selkirk; Stirling; Surrey; Sussex; Sutherland; Westmorland; Wigtown; Wiltshire; Yorkshire. (*N.B.* Some cross-border sheets between Wiltshire and Dorset and Gloucestershire were published only as zincographed quarter sheets, but, conversely, all the other Wiltshire cross-border sheets with Dorset, Gloucestershire and Somerset were engraved.)

County for which the mainland was published in engraved full sheets and the islands in zincographed full sheets: Argyll.

Counties published in zincographed full sheets: Orkney and Zetland; Outer Hebrides; Skye.

Counties published wholly in quarter sheets: Anglesey; Bedford; Brecon [Brecknock]; Cambridge; Cardigan; Carmarthen; Carnarvon; Derby; Dorset; Gloucester; Hereford; Huntingdon; Lincoln; Merioneth; Montgomery; Norfolk; Northampton; Nottingham; Radnor; Rutland; Shropshire; Somerset; Stafford; Suffolk; Warwick; Worcester.

Counties for which the early mapping (surveyed before 1875) was published as engraved full sheets, but which otherwise were published in zincographed quarter sheets: Cornwall; Devon; Pembroke. (*N.B.* (1) Cornwall sheets 44-5, 54-5 published late 1860s, but replaced by revised zincographed quarter sheets, late 1880s; (2) Pembroke engraved sheets were usually completed to the neat line when the main part of the county was surveyed in the late 1880s, but the comparable Devon sheets were not).

Six-inch full sheets of the first revision (1887-1907)

Although the usual practice was to publish the six-inch mapping derived from the 1:2500 revision of 1887-1907 in helio-zincographed full sheets, (produced by redrawing at 1:5280 rather than by direct photo-reduction), full sheets were retained for some limited areas, as follows:

Banff: sheet 40 (engraved).

Caithness: whole county, (mostly helio-zincographed; a few engraved).

Inverness: whole county, (mostly engraved; sheets 1, 1A, 2-5, 10-13, 18-20, 29-31 helio-zincographed).

Lancashire: sheets 1-48 (all engraved).

Lewis: whole county, (all helio-zincographed).

Outer Hebrides: whole county, (all helio-zincographed).

Ross and Cromarty: whole county, (mostly engraved; sheets 11A, 18, 18A, 26-30, 39-43, 52-5, 64-7, 76-9, 88-90, 99-101 helio-zincographed).

Skye: whole county, (all helio-zincographed).

Sutherland: whole county, (sheets 1-101 engraved, rest helio-zincographed).

Yorkshire: a group of sheets in the north-west part (all engraved).

It should be noted that, prior to 1887, any revision of engraved six-inch mapping was effected by engraving; quite extensive railway revision was carried by this means between *circa* 1855 and

1867, and a few sheets received general topographical revision. (Hampshire 74-6 and 83-4, Lancashire 21 and 105 are known to have been revised topographically; were there others?)

In Scotland the full sheets were presumably retained for those counties where there had been little change, but the retention of engraved sheets in Lancashire and Yorkshire is problematic unless there, too, it was assumed that change on the ground made revision of the copper plates an easier option than redrawing for helio-zincography. Or was the retention of engraving resorted to in order to provide a full-scale comparison with complete re-drawing, in order to establish which would be the more satisfactory course when it came to revising the six-inch mapping of those counties originally published in full sheets? Chronological considerations lend some support to the latter idea.

The Half-inch map: a study meeting at Uppingham

(1) Official *Sheetlines* report, (published for the first time)

On Saturday 6 March about fourteen members gathered in Uppingham to participate in what was both a study-meeting and an experiment in co-operative work. The meeting was organised and led by Guy Messenger, who is working on a carto-bibliography of these maps with a view to its being included in the intended monograph on the half-inch, to be published by the Charles Close Society. The main object of the meeting was investigate the topographical changes on the maps, and in particular whether a statement that a particular sheet had been republished between 1924 and 1932 with revision derived from the One-inch Popular Edition was significant or not. Attention was focussed in the first instance on the introduction of the 'Pt' category of post offices and of the footpath symbol, and then on road classifications. Some participants had enough time to search for other topographical changes. The results have not yet been analysed, but the participants gained an insight into how carto-bibliographic work is undertaken, and some of the assumptions of various *savants* were shown to be not wholly justified!

(2) Newspaper report, (reprinted from the *Rutland News* of 12 March, 1993)

Map enthusiasts converge on Uppingham

The Charles Close Society for the Study of Ordnance Survey Maps held a study group meeting in the Church Room at Uppingham on Saturday which was attended by 16 members assembled from as far afield as Dorset, Central Wales and Norwich as well as from London and the East Midlands.

Readers may not have heard of Sir Charles Close, who was Director-General of the Ordnance Survey during and after the First World War but may not be surprised to learn that the CCS now has between three and four hundred members, including a number of correspondent members in overseas libraries and universities, as well as in those of Great Britain and Ireland.

Why Uppingham? First, because of the facilities offered by the managers of the Church Room, so admirably suited to the close study of the large number of maps assembled by the members attending; and secondly because Guy Messenger of Uppingham is the possessor of one of the largest collections in private hands of the particular series of maps which was under review at this meeting.

...

Host and hostess at the meeting were Guy Messenger of Uppingham and Elizabeth Frowde of Thorp by Water.

Cartographic discoveries

Those of us who watched and commented on the progress of Guy Messenger's study of the One-inch Third Edition map of England and Wales, Large Sheet Series, were kept in a state of expectation, waiting for two states of this map to turn up: the 1909 printings of Sheets 118 and 128. These two sheets were in effect renumbered versions of the East Kent (North) and (South) sheets of 1906, and although copies of both the 1906 East Kent sheets and of the 11.10 state of Sheet 118 and

of the 7.12 state of Sheet 128 are common enough, the 1909 states of both sheets, suggested by the publication dates on the later states, failed to appear. Some of us were inclined to think that, though the 1909 states might have got to proof stage, they were never published. However, a copy of the 1909 state of Sheet 118 has now turned up in a private collection. A preliminary comparison with the 1906 East Kent (North) predecessor and the 11.10 successor shows that a considerable number of post office revisions were effected and spot heights added in the Isle of Sheppey on the 1909 state; also added was the new road across the River Stour from East Stourmouth to Gore Street, (see *Sheetlines* 35, p.37). The presumption is now strong that Sheet 128 was also printed in 1909, and your Editor is waiting for a copy to turn up!

One other elusive map is a '6035' printing of One-inch Fifth Edition Sheet 106. There are plenty of copies with the print-code '6035, 6036', but none, it seems, with just '6035'. Does anyone know any better?

A very noisy 'cartographic silence'

George Jasieniecki draws our attention to an article 'Maps for the million' by Arthur Gaunt, published in the *Eagle Annual circa* 1959-60. At first sight it looks to be rather similar in fundamental nature to the sort of paraphrased press-release produced in great quantity for the OS bicentenary two years ago. There are a number of infelicities which might have been avoided, e.g. the use of 'uncoloured' for 'unlayered' map, which makes 'Uncoloured maps are usually covered with wavy lines known as contours... these lines are more difficult to understand than colouring', appear merely quaint. However there is a quite startling oddity, twice repeated: 'The sheets... go to the Government map works at Chessington, Surrey...' and (in a caption to a charcoal drawing) 'The busy scene at the Government map works at Chessington...', (actually, it could be of any drawing office, anywhere). There is not a mention of 'the Ordnance Survey'; instead we have this extraordinary 'Government map works at Chessington', true in fact if questionable in spirit. Can anyone explain the reason behind this?

A Petty acquisition

The British Library has recently acquired the papers of Sir William Petty (1623-87), which include 103 large scale maps from the 'Down Survey' of Ireland of 1655-9. This survey was made under Petty's direction, and was a direct forerunner of the Ordnance townland survey of Ireland, begun in 1824.

Tales from the Map Room

Six half-hour programmes under this title are to be telecast by the BBC, on each Thursday from 6 May to 10 June, at 8 or 8.30 p.m., on BBC2. Each programme will take a theme: maps as lies, maps and territory, maps and warfare, route-finding maps, city maps and maritime charts. Peter Barber and Tony Campbell of the British Library, Map Library are advisers to the series, and the accompanying book, *Tales from the Map Room: fact and fiction about maps and their makers*, is edited by Peter Barber and Christopher Board. It will be published at about the time that this note appears in print. There will be contributions from several members of the Charles Close Society.

Colour tabs on maps

Following the comment in Sheetlines 35, p. 38, John Paddy Brown writes:

A reader asks if they denote a proof copy. Colour tags, or 'Gretags' (the trade mark of the manufacturing company is now used as a generic term in printing), are colour control strips used by printers to control the density and accuracy of colours during print-runs. They appear on *all* printed maps, proofs or finished copies, but are guillotined off sales editions during the print finishing process. Your example could, therefore, be a proof copy or an untrimmed sales copy.

The colour blocks on Examination Extracts are not colour control slips: they are printed as an assurance to the examining authority and the examinee that all the colour components of the map are present on the extract.

Although it is common enough to see the word 'Proof' rubber-stamped on proof copies, there are plenty of proofs which have slipped through unstamped. When it comes to identifying proofs and published copies, the only sure way is to examine the maps.

What the paper said, a little while ago

Your Editor has been rather remiss in failing to draw his readers' attention to an item by Andrew Moncur in the Diary section of the *Guardian* of 3 July 1991, for which he is indebted to Brian Adams, and which refers to one of the OS bi-centenary full page advertisements appearing at that time:

The good old Ordnance Survey has been in lyrical mood, marking the 200th birthday of its very first map. It has been wandering feather-footed through the plashy fen of advertising. You've probably noticed its full-page ads celebrating the untrodden woodland and tumbling rivers - have I got that right? Untrodden rivers, tumbling woodland? - of the rural Britain it so doggedly charts. 'Ever heard of Cullpepper's Dish, Turners Puddle, Throop or Yearlings Bottom' the OS asks, showing a section of its East Dorset sheet. 'Your ignorance of these evocative names should persuade you there are indeed some backwaters left to discover in these crowded islands.' Down these byways, 'the village of Throop, nestling in slanting meadows, goes quietly about its business. Which, in this part of the world, is no business of yours, thank you very much.' The only thing that the OS fails to mention is that this particular bit of countryside, backwater or not, is about to need some remapping. English China Clay wants to dig it up to extract 250,000 tons of gravel. The company has banged in an application to tear into some slanting meadows at Throop Clump, 'twixt Throop village and Cull-peppers Dish. The proposed haulage route for gravel lorries roars neatly around the little section of map chosen by the OS to illuminate its anniversary ads. Going *quietly* abouts its business, eh?

Brian Adams remarks that 'neither OS advertising nor the *Guardian* Diary seems to have noticed that only a mile to the south is the Tank Training Area of Bovington Camp, hardly conducive to going quietly about one's business.'

Golf links on Salisbury Plain

Concerning the addition of golf links to the 1927 edition of *War Department Land on Salisbury Plain*, (see *Sheetlines* 34, p.27), Ian O'Brien suggests that 'golf courses (like abandoned railways and Roman roads) form very easily recognisable landmarks from the air. (Alternatively, it might just be a case of stopping the troops from trampling on the greens - cf military sensitivity, on manoeuvre maps, towards the interests of race horse owners and trainers.)'

One-inch Seventh Series maps, Dunn and Wilson library edition

Tim Nicholson draws our attention to a Dunn and Wilson library edition of Sheet 156, on which the black plate detail appears in blue, and asks whether there is anything special about this. The Seventh Series job files (at present in the custody of the Charles Close Society) do not mention any special printings for Dunn and Wilson, and your Editor thinks that the procedure was that Dunn and Wilson obtained ordinary stock flat sheets from the OS, and then laminated them and put them in heavy-duty hard covers. The 'blue' effect, which your Editor recalls noticing on other Dunn-and-Wilsonised Seventh Series, is almost certainly due to a chemical in the lamination reacting with the black ink. Can anyone confirm this? And are all Dunn and Wilson library editions liable to this change over time, or is it the outcome of storage conditions or of the 'recipe' for the lamination changing from time to time? Dunn and Wilson library editions of the Seventh Series seem to have started to appear in the later 1960s, at about the time that the Seventh Series ceased to be available mounted on 'cloth'; in the mid-1970s the 1:50,000 maps were offered similarly. The result of the lamination and

covering process was a very robust map, well suited both to reference and lending, but the apparent colour instability resulting from the lamination has resulted in it being a conservation nuisance and, as far as second-hand sales are concerned, a virtually unrealisable asset.

Before Dunn and Wilson's enterprise, it was quite common for libraries to buy ordinary folded and mounted OS maps and to put them into heavy-duty stiff covers, and, indeed, the demise of the Dunn and Wilson edition has brought about a modest revival of the practice, perforce without the 'cloth' mounting. Your Editor has seen considerable numbers of ex-library copies treated thus, but they all seem to be of post-1945 maps. Has any reader seen a pre-1940 map treated thus?

Official mapping in Hong Kong

Whether or not the Ordnance Survey really *is* the world's premier national mapping agency is a question which is perhaps not easily answered, but it is a question which can only be answered by comparison. Thanks to the enterprise of Roger Hellyer and John Beer, we can at least give a short report on the Survey and Mapping Office (SMO) of the Building and Lands Department of Hong Kong.³

The SMO is responsible for geodesy, continuous revision of large-scale mapping, photogrammetric work, land title work, computerised land information management, cartographic and reprographic work, and miscellaneous land survey work. The Principal Government Land Surveyor has under him about 1300 staff, divided roughly equally between surveyors and cartographers. There is an Urban Survey Division, with three local offices in Hong Kong and Kowloon, and a New Territories Survey Division, with nine local offices. Rapid urban growth and the uncertainties arising from inadequate old records of land holding generate much work.

The Topographic Survey and Mapping Division are responsible for surveys. The basic scale is 1:1000, which is complete for Hong Kong and Kowloon (in 364 sheets), and two-thirds complete (1767 of 2641 sheets in October 1992) for the New Territories. (The remainder of the New Territories are covered by a 1:1200 series, in process of replacement.) Derived mapping is produced at 1:5000 (159 of 162 sheets published at October 1992), 1:10,000 and 1:15,000 (the last two of urban areas). Revision is intensive: urban areas are revised annually, though 'a remote area in the New Territories would not be checked for five years or more.' All these large-scale maps are in monochrome; the basic style is rather plain, like a neat building plan, and the specimens seen in the U.K. are on dyeline paper which is archivally troublesome. There was formerly a 1:10,000 imperial series, produced by the Directorate of Overseas Surveys in 1965, but this fell into disuetude following a metrication decision in 1973. Formerly, Hong Kong and Kowloon were mapped at 1:600 and the New Territories (except some high ground and islands) at 1:1200, contoured at 10 ft intervals; this mapping was completed in 1971.

There are also full colour topographic maps at 1:20,000 (16 sheets), 1:50,000 (2 sheets, with an alternative two-colour version), 1:100,000 and 1:200,000 (1 sheet each), an Official Guide Map at 1:125,000, and a seven-sheet Countryside Series which covers the whole territory. (The quality of those sheets seen is excellent.) The 1:20,000, completed in 1978, replaces a 1:25,000 series produced in 1965 by the Directorate of Overseas Surveys. 11 of a projected total of 15 1:20,000 geological maps have been published, at October 1992.

A Computerised Land Information System was established in 1989 and will be fully operational in 1994. It can both produce standard 1:1000 mapping and customised plots; 'direct on-line access to the central mapping data may be possible.'

³ The following is based on three leaflets supplied by Roger Hellyer, (*Buildings and Land Departments, Hong Kong, Survey and Mapping Office; Identification of old lot boundaries in the New Territories; Hong Kong: the facts. Mapping*), and various maps in the collection of John Beer.

Ordnance Survey / Hydrographic Department 'Coastal Zone Series'

Through the accident of being in the right place at the right time, your editor has been able to obtain sight of a prototype sheet of this series, which, should it become a reality, will be the first collaborative publishing venture between these two long-established official mapping departments. The sheet, of which a limited quantity have been printed for experimental purposes, is The Solent - Sheet 4, *Langstone Harbour to Pagham Harbour*, and is at 1:25,000. The trimmed size of the map is a little larger than that of a standard OS 1:50,000 *Landranger*, but the prototype is folded 5 x 3, semi-bender, so that it is nearly A4 size, even when folded. The paper is printed on both sides, and the reverse includes fourteen panels, covering various matters including safety (on the 'back cover' when folded), indexes to OS, Hydrographic and British Geological Survey mapping, 'Explanation of tidal and height measurements' (OS and 'Hydro' use different datums) and tourism. This last is of some significance, as it suggests that what we have here is a conventional map aimed at a mass market, rather than (as one person remarked when I commented on the lack of field boundaries) something to be marked for GIS purposes. This impression is reinforced by the inclusion of various details associated with 'popular' mapping, such as churches with and without steeples, bus stations, public rights of way and public houses. The prototype sheet extends from 466 to 489 km east and from 090 to 108 km north on the National Grid, which is printed in blue. Most exceptionally for a modern OS map, the legend is in the bottom margin, though this may be something to do with the demands of sheet lines, rather than a designer's taste.

The map itself is pleasant to look at, and is probably helped by its employment of a light green land tint, which sets off the browns of the inter-tidal zone and the blues of the hypsometric water tints. Contours are at 5 metre intervals and are in a good brown, which shows up even against the uncased brown stipple used for buildings. The inter-tidal zone is contoured at 1 metre intervals, (and makes one long for such treatment of other areas of extensive foreshore!). Roads are also uncased, and in that respect the map has some echoes of the Ordnance Survey of Ireland 1:50,000, though unlike the OSI map the lettering here is conventional Univers, and looks a lot better.

Tourist information on the map is in a dull lilac colour, (a great improvement on the blue hitherto favoured by OS at this scale) and 'conspicuous landmarks' are in magenta. Buoys are shown according to their colour, the nature of the seabed is shown by abbreviations in brown, and sites of special scientific interest and nature reserves are shown in green.

For those of conventional cartographic upbringing, the most conspicuous failing of a most interesting experiment, which one hopes will soon pass into the production stage (and on paper), is the omission of field boundaries. It is understood that OS are anxious not to lose 1:25,000 *Pathfinder* sales, but this seems short-sighted. One answer would be to recast at least some of the *Pathfinders* on new sheet lines, (following the example of Sheet 1126, *Gower*), so that they complement the Coastal Zone maps, (having the top of the sheet described here at 108 north, leaving a 2 km gap, is plain provocative), in the way that they are complemented by the Outdoor Leisure Maps. The omission of road casings *looks* odd, and in the built-up areas gives a false impression of roads having been omitted, (partly because minor roads are drawn - or computer-output - to a narrow gauge), but whether any real harm is done by this, at least in terrain such as this where most roads are fenced, is questionable. (For maps covering both lowland and upland the omission of indication of fencing would seriously dilute the geographical value.)

Richard Oliver

Additions and corrections

To Richard Oliver's Guide to the One-inch Seventh Series

p.47, *New Forest*, edition B/*/* (1981): at least some copies have tourist information printed on the back of the sheet, and 'Now with Tourist Guide' overprinted black on a silver oval ground on the cover.

To Guy Messenger's article on early Bender-folded maps in Sheetlines 33, p.57:

The following are to be added to the list:

One-inch Popular Edition of England & Wales: 14, 2038; 81, 3038.

Half-inch Special District Map: *Island of Skye*, 30/37.

England Popular Sheet 14, 2038, has the sheet name on the spine, a feature which has also been reported on Sheet 61, 2539, and Sheet 117, 1239; has it been seen on any other Populars of England and Wales? (Information on the spine is usual, though not standard, on most of the bender-folded One-inch Fifth Edition and Tourist sheets; your Editor cannot recall noticing it on any half-inch sheets.)

(Thanks are due to Roger Hellyer, Tim Nicholson, and Stephen W. Simpson for drawing attention to the above.)

Ordnance Survey leaflets: supplementary list

This supplements the list in *Sheetlines* 7, pp 9-12; 8, p.18; 11, p.17; 12, p.13; 13, p.22; 18, p.17; 25, p.8.

4	<i>The Ordnance Survey Map and Archaeology</i> , 1st Edition,	OSO 96 10,000 9-32
	ditto	OSO 9215 500 10-36
6/34	<i>Abridged List of OS Small Scale Maps of England and Wales</i> ,	OSO 9215 100,000 2-34
6/34/2	ditto	(OSO 9215 40,000 2-34 OSO 9215 60,000 4-34)
6/35/2	ditto	OSO 9215 25,000 4-35
no number	ditto	OSO 50,000 7-2-29
7/35	<i>Abridged List of OS Small Scale Maps of Scotland</i> ,	OSO 9215 10,000 1-35
7/37	ditto	OSO 9215 20,000 2-37
7/38	ditto	OSOS 9215 20,000 3-38
9/34	<i>The OS Plans of Great Britain...1:2500 or 25.344 Inches to 1 Mile</i> ,	OSO 10,000 2-37
9/39	ditto	OSO 10,000 6-39
10/39	<i>The OS Map of Great Britain...Six Inches to 1 Mile</i>	(20,000/30 (20,000/35 (10,000/39
18/35/2	<i>Price List of OS Small Scale Maps revised 1 Jan 1936</i>	OSO 5936 5,000 7-36
18/39	<i>Price List of OS Small Scale Maps revised 1 Jan 1940</i>	OSO PN78 5,000 1-40
34/35	<i>Map of Great Britain in two sheets in the style of the International 1:1,000,000 Map</i>	OSO 9215 5,000 5-35
37	<i>Abridged List of Geological Maps</i>	5,000/31 8,000/33 5,000/35 10,000/37
41/34	<i>Gazetteer for this Map</i> [? London 3-inch or 1-inch 5th Relief]	OSO 10,000 2-34
no number	<i>Exhibition of Maps and other Productions of the OS of GB at 39 New Street, Birmingham</i>	OSO 4,000 10-33
no number	<i>Map of Roman Britain</i>	OSO 10,000 16-4-30
no number	<i>Ordnance Survey Eclipse Map</i>	OSO 3,000 16-5-27
no number	<i>List of Professional Papers</i>	OSO 250 27-6-28

Tim Nicholson

A preliminary list of Ordnance Survey mapping of the Channel Islands

Following a request from a member, a preliminary list has been prepared of OS mapping of the Channel Islands. It has been compiled partly from the British Library Map Library catalogue and partly from holdings in private collections. It is almost certainly incomplete, and the Editor of *Sheetlines* will be extremely grateful to any reader who writes with corrections and additions, in the hope that one day it will be possible to write a full account of these maps.

In the following, imprints have not been transcribed verbatim, and there are probably some inconsistencies in recording dates. Several maps based on work by commercial air survey firms have been included, pending investigation of their relationship to, and re-use of, OS work.

Abbreviations:

BLML	British Library, Map Library
DMS	Directorate of Military Survey or equivalent
GSGS	Geographical Section, General Staff
MV	Magnetic Variation
UTM	Universal Transverse Mercator

Channel Islands

1:12,500

Sark, Hern, Jethou - GSGS 4377 - 2nd edition - drawn and reproduced by Home Forces, 1943. [BLML 14120 (19)]

1:50,000

1:50,000 mapping of the whole of the Channel Islands, in a style based on the OS 1:50,000 Second Series, but with uncased roads and without contours, has been published in the OS/AA *Channel Islands Leisure Guide* (1987), and in the OS/Hamlyn *Ordnance Survey Touring Atlas of Great Britain*, (1987, fourth edition 1990). It is not known from what source this mapping derives.

Alderney

1:1250

Surveyed 1951, printed by OS for Home Office 1957-8. (6 sheets) [BLML]

1:2500

Surveyed 1951, printed by OS for Home Office 1958-21. (20 sheets) [BLML]

1:10,560

Published OS, Southampton, 1911. [BLML 14135(5)]

GSGS 2558 (For War Department Purposes Only); surveyed by a Field Survey Section OS 1910, printed OS, Southampton, 1911.

ditto: published War Office 1910, 1st edition 1910, MV 1910 [proof printed OS 1941]

Published OS, Southampton, 1933. [BLML 14135(4)]

Directorate of Military Survey, series M 824, Alderney, edition 4 GSGS. Published 1966; reprinted by George Philip Printers Ltd 5/73/730952F

ditto: published DMS

Directorate of Military Survey, series M 824, Alderney, edition 4 GSGS. 1st edition 1968, published DMS 1973. [BLML 14135(13); another copy 14135(140)]

Another edition, Reprinted by 42 Survey Engineer Regiment 4000/12/77/1186R, UTM grid, MV 1968.

Revised by OS 1988 from surveys at 1:2500 and 1:1250, revised 1987; levelling from GSGS 2558, Edition 3. Integral cover includes two puffins.

N.B.: 1:10,000 produced by Germans from OS 1:10,560: BLML has edn 2, 1941 (Maps X.555)

Guernsey

1:2500

Surveyed 1898-9. [No further details; no set in BLML, but cf following]

Surveyed 1898-9 and revised 1938, pub. OS 1939. 35 sheets. (II.2 is of first edition, 1900.) [BLML]

1:5280

No regular mapping produced at this scale, but BLML has 'blues' at this scale, with detail reduced photographically from the 1:2500 of 1899, for drawing the 1:10,560: Maps C.C.2.g.13.)

1:10,560

'An Accurate Survey and Measurement of the Island of Guernsey ... 1787.'

[BLML Maps 189.b.(18)] [Original plates presented by OS to States of Guernsey, 1960]

Surveyed 1898-9, published OS 1900. [BLML Maps 14160 (13)]

1:21,120

Surveyed in 1898-9, revised in 1933, drawn, heliographed and printed by OS, Southampton, 1934. 2100/34.

As above, 2100/34, 5000/34

As above, 2100/34, 5000/34, 500/40

As above, 500/40, 5000/46

As above but unique number 6 in place of print-code

As above but unique number 47 in place of print-code

As above, but print-code omitted.

As above, revised in 1955, ground checked 1956, published 1958. Includes UTM grid. Edition B.

As above, M.824, Edition 2, London, DMS, 1958.

As above, further revised by BKS Air Survey 1963; published OS 1966. Edition C.

As above, M.824, Edition 3, London, DMS, 1966.

Coleraine, BKS, 1966. [BLML Maps 56.a.51]

GSGS 4205, with military grid - 1942. [BLML]

N.B.: 1:25,000 produced by Germans from OS 1:21,120: 2nd ed, 1941. [BLML Maps x.548]

1:25,000

Directorate of Military Survey series M.824, Guernsey, edition 4. Printed and published by DMS 1975 [BLML Maps 14160(28)]

Directorate of Military Survey series M.824, Guernsey, edition 4. Printed and published by DMS 1975, reprinted by No.42 Survey Engineer Regiment 3500/3/84/830345R

... edition 5 - Revised 1985, published DMS 1986, printed by 135 Independent Topographic Squadron RE(V) 2000/3/86 [Copy in Exeter Geog Dept]

1:31,680

'Advance Edition', published OS 1901 [BLML Maps X.401]

Published OS, 1902. [BLML 14160(10)]

Reprint 9.05. (A copy is reported with 'Sold by T.B. Banks & Co, The Central Library, High St, Guernsey' overprinted below the title.)

Reprints 9.05; 8.09; 10.12; 12.17; 4.23; 4.25; 12.27; 5.28; 225.29; 200/31; 150/32.

Published OS, 1912. [BLML Maps X.558.]

Published OS, 1928, 'with grid', [BLML Maps X.559]

Herm and Jethou

1:5280

Coleraine: BKS Technical Services, (1966). [BLML Maps 56.a.50]

1:10,000

Directorate of Military Survey series M.824, Herm & Jethou, edition 4-GSGS, published 1970, printed by MCE (RE) 5/70/122/MCE(RE).

1:12,500

M.824. [Shown in diagram on M.824-GUERNSEY-Edition 5. No further details.]

Jersey

1:2500

St Helier only, 'special sheet', no further details available.

(Whole island) 45 sheets, 75 x 105 cm, published London, Hunting, 1966, [BLML 14195 (35)]

1:5000

Plotted from air photos and revised on the ground, 1934 - published OS, 1935-6. 11 sheets. [BLML]

14 sheets, published London, Hunting, 1966 [BLML 14195(36)]

1:10,560

'An accurate Survey and Measurement of the Island of Jersey...', 1795.

1:15,840

Published OS, 1934. 2 sheets. 500/34. [BLML]

Reprint 100/45

Reprint 100/46 Cr

(Version with unique number 7 has been reported)

Revised and compiled by BKS, Leatherhead, 1960. [4 sheets]

Revised and compiled by BKS, Leatherhead, 1960. [1 sheet]

1:25,000

Compiled and drawn by Hunting Surveys, 1968: M.824, edition 4 - published by DMS 1969.

Published by Hunting Surveys Ltd for the States of Jersey, 1972. UTM grid. MV 1972.

Published by Hunting Surveys, Boreham Wood, [1975] [BLML Maps 50.c.63]

Published by OS 1982 for the Island Development Committee, St Helier, based on 1:2500 maps revised by OS 1981 and made from surveys by Hunting Surveys Ltd, 1965, BKS Surveys Ltd 1978, and aerial photography by OS, April 1980, supplemented by Fairey Surveys June 1979.

M.824. [Shown on index to M824-GUERNSEY-Edition 5 - no further details.]

N.B. 1:25,000 produced by Germans from OS 1:15,840: 2nd ed 1941 [BLML Maps x.556], 3rd ed 1942 [BLML Maps X.557]

1:31,680

Published OS, 1902. [BLML]

Surveyed by No 2 Survey Section R.E. 1913, prepared and printed OS, Southampton 1914. MV 1914.

Reprint 2000/24.

Reprint 2000/24, 500/30

Reprint 2000/24, 500/30, 2000/31

As above, revised and reprinted in 1933. MV 1933. 2000/34. 5000/34.

As above, but with print code omitted and unique number 8.

As above, but with print code omitted and unique number 3884 [price 2/3].

GSGS 3967, Edition 3, 1943, London, War Office, 1944.

Revised by BKS Air Survey, Leatherhead, Surrey, April 1958; no MV; printed by Haycock Press, published by the States of Jersey, reproduced from OS with sanction of HMSO.

Sark

1:10,560

Produced by BKS Surveys, Coleraine, 1965 [BLML Maps 56.a.49]

Directorate of Military Survey series M.824, Sark (Sercq), edition 4-GSGS, published 1965.

Reprinted by 42 Survey Engineer Regt, R.E. 1000/10/82/821316R

(This list has been compiled with the assistance of Roger Hellyer, Tim Nicholson and John Taylor. Please send any additions or corrections to the Editor of Sheetlines - address on back cover.)

Gazetteered - for what?

Tim Nicholson draws attention to the leaflet illustrated here, which he suggests was intended to accompany the three-inch map of London; your Editor wonders whether it may not have been designed to accompany those Fifth (Relief Edition) sheets for which gazetteers were issued (114, 118, 144, 145). Has anyone else encountered this leaflet, and, if so, in what context? Answers to the Editor!