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“Twenty years of the Ordnance Survey
1:50,000 map”

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

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

Twenty years of the Ordnance Survey 1:50,000 map

by Richard Oliver

The Ordnance Survey was formally authorised to adopt the 1:50,000 scale as a metric replacement for the 1:63,360 (One-inch) in November 1971, and the first sheets were published on Thursday, 7 March 1974.¹ A complete history of the British 1:50,000 would have go back at least to the early 1930s, with the production of an experimental sheet by the War Office in 1933, and the consideration by the Davidson Committee in 1936-7 of adopting the 1:50,000 as part of a general change by the OS to metric scales. Metrication was studied again by the OS in the early 1960s. In 1965 the Labour Government announced a programme with a view to a widespread conversion to the metric system by 1975. The OS started to publish fully metric maps in 1969, but as yet the metric scale to replace the 1:63,360 was undecided. Although 1:50,000 was an international standard and drawing of an experimental 1:50,000 section around Luton was put in hand at this time,² and although an experimental enlargement of part of a 1:63,360 sheet with contours at 20 metres interval was produced for information purposes, 1:75,000 and 1:100,000 were also considered, but rejected.³ Both would have involved

reducing the amount of detail shown as compared with the 1:63,360, and both, like the 1:63,360, but unlike the 1:50,000, would have had to be drawn and revised at larger than publication scale. 1:62,500 was rejected as being unlikely to be a permanent solution for a metric-minded public (!) and as un-acceptable to the armed forces,⁴ and 1:40,000 was rejected as too large a scale, involving too many sheets.

It would have been perfectly feasible to produce a 1:50,000 series by straightforward photo-enlargement of the 1:63,360 Seventh Series, with metricated contours and spot-heights, but only eight such sheets were produced, as a short-term makeshift for educational purposes. Retention of the existing sheet lines was rejected, as a 40 x 45 km area at 1:50,000 was felt to be too large;⁵ 40 x 35 and 40 x 30 km were considered, but rejected as involving too great an increase in the number of sheets. A 40 x 40 km sheet size involved an increase of only 15 sheets, combined with a manageable sheet size. Long-term retention of the 1:63,360 material was also rejected, as some of it was deteriorating in quality, due to the photo-mechanical duplication process used in adding revision. Redrawing *ad hoc* at 1:50,000 would enable drawing in ink on glass, as used for the 1:63,360, to be replaced by scribing on plastic, which had been used for the larger OS scales since the 1950s. To redraw by scribing would take several years, without a large temporary increase in staff, and so it was decided

¹. The main sources are: *Report on the development of the 1:50,000 map series* (Ordnance Survey, May 1972, unpublished, main report by Brigadier G.A. Hardy; copy held by Charles Close Society); G.A. Hardy 'The Ordnance Survey 1:50,000 map series', *Geographical Journal* 140 (1974), 275-83); J.G. Price, 'A review of the design and production factors for the Ordnance Survey 1:50,000 map series', *Cartographic Journal* 12 (1975), 22-9; sheet history files for First Series sheets and the A editions of Sheets 111, 176 and 177, deposited with the Charles Close Society; and the maps themselves. The Hardy and Price articles derive substantially from the unpublished report. Unless noted otherwise, this article derives from these sources.

². A copy of this is deposited with the Charles Close Society archives.

³. The 1:50,000 enlargement was from part of Sheet 170. To assist the consultation and decision processes, in 1970 a 1:75,000 reduction of the whole of 1:63,360 Seventh Series Sheet 170 and a reprint with new footnotes of the 1:126,720 *Greater London* sheet of 1962 were

produced. I do not know if any 1:100,000 experimental mapping was produced at this time, but the production of the 1:126,720 suggests not.

⁴. As the forces were using the imperial 1:63,360, it is a little difficult to see why a metric 1:62,500 should have been less rather than more acceptable.

⁵. I.e. 80 x 90 cm within the neat lines. As at about the same time the first 1:25,000 Outdoor Leisure sheets were being put in hand, with slightly larger sheet lines, this decision seems eccentric, unless it was thought that the public would object to the necessarily extensive use of the cross-Bender fold, or it was thought that a 40 x 45 sheet would have to be conventionally Bender-folded.

to produce most sheets initially as part of a First Series, enlarged from 1:63,360 material, and a limited number as Second Series, drawn *ad hoc*, with the First Series sheets being redrawn as Second Series as they became due for full revision. Many of the sheets published from the start as Second Series were of the highlands and islands of Scotland, where the 1:63,360 was unsuitable for enlargement to 1:50,000 because of small errors brought about by the compilation method used for the Seventh Series. Thus of the southern block of 103 sheets published in March 1974, only three were Second Series, as against 48 of the 101 sheets in the northern block, published in February 1976.

Although the 1:50,000 was adopted as a 'metric' scale, it would initially have been only a partly metric map as, when formally authorised in November 1971, it was intended to retain Imperial contours and spot heights, as on the 1:25,000 Provisional Edition and on earlier sheets of the 1:25,000 Second Series; a fully metric map was expected to be 'opposed by some members of Parliament'.⁶ In the event, the now Conservative Government adopted a new metrication policy in the spring of 1972, and this difficulty disappeared. A further problem was resolved at about the same time, when the Local Government Act, which established new administrative county boundaries, passed into law, just in time for these to be included on those 1:50,000 sheets which were nearly ready for printing.⁷ Although as far as the public was concerned the changeover from 1:63,360 to 1:50,000 was to be accomplished over the shortest possible period, it was necessary to start printing in the autumn of 1972, in order to spread the burden evenly over the OS presses. The first sheet to be printed was 198, in a run of about 140,000 copies, in October 1972.

With the introduction of the Second Series the opportunity was taken to redesign the map

⁶. *Report*, 1972, section 3. This interesting point was omitted from the two published articles.

⁷. It is possible that the delay in the publication date of the southern block, from January to March 1974, is attributable to this; it was certainly not due to the 'three-day week' in the winter of 1973-4.

completely.⁸ The most striking change was the adoption of Univers in place of Times Roman and Gill Sans for lettering; Univers was adopted as providing a more 'integrated' look, and the avoidance of italic for other than administrative names enabled names either to be written in a smaller space, or in the same space slightly larger: either way there was a gain in clarity, which offset the shock for many of so radical a departure from established practice. Less immediately noticeable, but also radical, were the omission of parish boundaries⁹, of the distinction between coniferous and non-coniferous woodland,¹⁰ and of the distinction between single and multiple track railways.¹¹ Orchards were to be shown by dots rather than by tree symbols, tourist information symbols were to be shown, and part of the legend was to be in French and German as well as English. Other radical changes contemplated in 1969-70, such as the abolition of the distinction between fenced and unfenced roads, were dropped after consultation with users. The main changes in the colour scheme were the use of blue rather than black for grid lines, blue rather than red for motorways, screened orange rather than screened black for building infill, and orange-brown rather than dark brown for contours and B roads. To maximise

⁸. Or rather, much of what had been tried in the Luton experiment of 1969-70 was now to be adopted as standard practice. Curiously, there is no reference to this experiment in the 1972 *Report*.

⁹. They were included on the Outline Edition of the Second Series until the early 1980s, when they were dropped as the dots were troublesome to scribe. Parish boundaries had of course been omitted from the Popular Edition of England and Wales.

¹⁰. This had been omitted on later sheets of the 1:63,360 Fifth Edition and on Fifth-style sheets of the New Popular Edition. The reasons for this, and for its restoration to the Seventh Series, deserve further study.

¹¹. This had always been shown on the 1:25,000 and larger scales, but was only introduced to the 1:63,360 in the mid-1890s, probably at military behest, though by the 1970s the information was of much greater use to railway enthusiasts. The chequer symbol used on the Seventh Series for single track would be awkward to scribe, but the use of a narrower gauge of line for single-track lines, as on the aviation derivatives of the 1:253,440 Fourth Edition, might have answered.

homogeneity, the colour scheme adopted for the Second Series was also to be used for the First Series. It was originally intended to print public rights of way in green, but, not long before the first sheets were printed,¹² the red of the 1:63,360 was reverted to. Four-colour rather than six-colour printing was also tried, but was abandoned, not least, it seems, because it was difficult to provide a satisfactory synthetic green for rights of way passing across woodland.¹³

The simultaneous publication of Sheets 102-204 in March 1974 and of Sheets 1-101 in February 1976 must rank amongst the Ordnance Survey's greatest achievements, even though many of the maps were effectively 'provisional editions', the last of a number of such at various scales produced since the 1940s.¹⁴ Provisional editions or not, the design of the First Series did not stay static. Except on a few very early reprints, tourist information was added at the first convenient opportunity, (though as sufficient stocks to last until conversion to Second Series had been printed of some sheets, not all First Series sheets appeared with this information), replacing an index to the new maps which, on folded copies, merely duplicated that on the back cover. A few other design changes were effected around 1976-7, including the substitution of a more prominent windmill symbol on the Second Series. Early in 1978 what was at first known as trichromatic and later as four-colour process printing was adopted for both the First and the Second Series, which were now to be printed in black, magenta, cyan and yellow. At first the early six-colour scheme was approximated to, by such devices as mixing magenta and yellow to produce a synthetic red, but in 1980-81 a slightly modified colour scheme

¹². Certainly after the unpublished *Report* was completed, in May 1972.

¹³. The whole question of how the OS avoided four-colour printing for so long is worthy of further study. Some printings of the 1:63,360 Popular and Fifth Editions were in as few as five colours, and colour combination for tints -blue and red for orange, blue and yellow for green - had been used on the 1:63,360 indexes to 6-inch and 1:2500 as early as 1898!!!

¹⁴. The outline editions of a few sheets were only published later in 1974.

was adopted, characterised by full cyan instead of screened blue for motorways, full magenta instead of red for A roads, and screened magenta contours. The contour colour was legible, but perhaps rather brash; subsequently a synthetic brown was adopted, visually more pleasing but not so legible.

The change to what one might call the 'magenta style' was made for reasons of economy; another, unrelated, economy, effected at the same time, was the adoption of a joint civil-military specification for the map.¹⁵ Since about 1919 separate civil and military versions of the 1:63,360 and 1:50,000 had been produced, mainly because of the different grid formerly used by the military, but on the new 1:50,000 the only real difference between the civil and military versions was the printing of grid figures and letters on the map face, in addition to the margins. Following a consultation exercise in the autumn of 1980,¹⁶ printing grid figures and letters on the map face was adopted universally, and the need for a separate military version ceased.¹⁷ Economy or not, putting the grid figures on the map face was an immense boon for that minority who use the grid, and a few years later these figures started to appear on the 1:25,000 as well. A further economy, of using an integral cover (to make space for which the French and German legends were jettisoned), was unsuccessful, as it meant reverting to separate civil and military printings. The economy in adopting magenta and merging civil and military versions was offset by some improvements in content, notably the restoration

¹⁵. Conspiracy theorists seeing in this an icon of the revival of the 'cold war' by the new Conservative Government will be interested to learn that the decision was taken under the outgoing Labour Government.

¹⁶. Carried out by putting questionnaires inside sales copies of the maps. These questionnaires also sought opinions on the use of magenta rather than red.

¹⁷. A few grid figures which would have obscured map detail were removed. Military print codes, in the style of quantity/month/year/MOD order number, appear when a proportion of the sheets in a run are for military use, and it was to this, rather than the civil run (usually much greater) that the quantity printed (more recently omitted) referred. These print-codes are useful for identifying 'facsimile' reprints: see *Sheetlines* 33, p.53.

of the distinction of various woodland types, and - hitherto not shown at smaller than 1:25,000 scale - the distinction on foreshore of sand, mud and shingle, no doubt so as to provide a guide to sandy beaches. At the same time the 1:50,000 received a name: the *Landranger*. The Second Series was completed in January 1988 with the publication of Sheet 29; in June 1988 fully revised 'B' editions of Sheets 109 and 115 were published, and since then an average of about 16 sheets a year have been republished with full revision.¹⁸ (For the statistically-minded, 320 editions of the 1st Series and 834 of the Second Series have been traced to 31 December 1993, a total of 1154.)

The marked design changes in 1980-1 have been the last of their sort to date; subsequent changes have been small, discreet and probably unnoticed by most users. They include the omission from 1988-9 onwards of the showing of Forestry Commission land,¹⁹ and some changes in revision practice, notably the adding of some substantial urban growth at intermediate rather than full revision²⁰, and in adding yellow infill to some tarred dead-end roads. Other changes have not progressed beyond the experimental stage; they include a lurid layered version of Sheet 42, printed in 1981, and a much more attractive hill-shaded version of Sheet 90.²¹ How long this stability may be expected to continue is open to question: the 1:50,000 is at present still largely produced by analogue methods,²² but in 1990 some experimental

1:50,000 vector data of east Kent was produced,²³ the whole country has recently been made available in raster form,²⁴ to produce such a map by analogue means is increasingly anomalous,²⁵ and Ordnance Survey has invited contributions to a discussion on 'cartographic concepts' which must inevitably touch on the design and content of the 1:50,000. What those changes will be remains to be seen. The one thing that does seem certain is that the 1:50,000 will be produced as a conventional paper map for many years to come.²⁶

²³. Not, I understand, to the full 1:50,000 specification. But in 1983 a digital version, to Second Series specification, of Sheet 76 was produced and publicly exhibited, to the British Cartographic Society, the Royal Geographical Society and others. There was no noticeable difference between it and an analogue map.

²⁴. See *Sheetlines* 35, pp 32-3.

²⁵. By the end of 1995 digitisation of the basic-scale mapping at 1:1250, 1:2500 and 1:10,000 should have been completed, and it is understood that a raster-digital method of maintaining the 1:25,000 is being adopted.

²⁶. I am indebted to David Archer, Peter Clark, Roger Hellyer, Yo Hodson, John Taylor and Lez Watson for assistance of various sorts towards this article and the list of editions which follows.

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For a current comprehensive listing of editions of the 1:50,000 map, please see Lez Watson's catalogue at:

<http://www.watsonly.addr.com/50k.htm>

¹⁸. Or fairly full: see the review of Sheets 113 and 192 in *Sheetlines* 36 (April 1993), pp 36-41. Sheet 111 had been republished in a B edition in 1983; it is understood that this was in connection with a digitising experiment.

¹⁹. It is understood that this was because of the expected privatisation of the Forestry Commission, which might result in the loss of access to some woodland.

²⁰. The writer has only seen this on a minority of sheets. There are occasional earlier examples on the 1:63,360 and 1:50,000, usually acknowledged in the footnotes.

²¹. Copies in private collection.

²². The rights of way information has been provided by digital methods for a long time, and, indeed, when the rights of way symbols for the Second Series were designed it was with a long-term view to digital output.