

THE QUARTER INCH TO ONE MILE (1:253,440 SCALE) TOPOGRAPHIC MAP OF GREAT BRITAIN: A TEMPORARY MAP WHICH OUTLASTED ITS USEFULNESS, 1945-1960

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Abstract

After the Second World War plans for a new small scale topographic map of Great Britain were delayed by the need to complete the badly needed revision of large-scale mapping and the one-inch to one mile (1:63,360) map first. An obligation to provide a general map particularly for motorists and general administrative uses required the Ordnance Survey, Britain's national mapping agency, to publish a map at the scale of 1:253,440 or 1:250,000. As a short-term expedient, the pre-war 4th edition of the 1:253,440 map was published with the addition of the National Grid a metric reference system recommended by a government committee in 1938. This grid replaced a yard grid but the underlying detail remained essentially the same as on pre-war versions of the map. Those had been produced from larger scale mapping which was already out of date by the mid 1930s. Minimal changes were made to the old mapping before publishing it in 1945 and 1946. There is ample evidence that selected revision undertaken in 1938 was included, particularly on the margins of growing towns and cities. Some attention was also paid to updating road information. Nevertheless there is clear evidence that the post-war map was based on pre-war reprographic material which was updated only selectively.

Strangely, one of the reasons given for replacing the 4th edition was that it was becoming 'overcrowded'. This can be shown to result from changing perceptions of what a quarter million map should look like, than from actual change on the ground. When an opportunity occurred to revise these post-war editions, many minor roads in rural areas were eliminated to reveal a less cluttered map. However, once the black plate carrying the detailed built-up area had been revised, other changes were confined mostly to road classification and numbering, and to the status of stations on the railways. By the late 1950s the map whose style derived from the beginning of the century and whose main detail had been created over 25 years before was looking very antiquated. Its replacement in the 1960s by a newly designed map after the publication of a pilot sheet in 1957 closes an era of small-scale map design.

Introduction

This comparatively neglected map series, which a cartographer has recently told me was old fashioned and hard to read when he first bought a set of them to cover the entire country in about 1946, was obviously a temporary issue. The dates of full revision of the detail vary from 1915 to 1930 for England and Wales, and from 1923 to 1928 for Scotland. This was even printed on the front covers of folded maps but with the addition of the words 'with later corrections'. Due to lack of resources and the understandable pressure to revise large-scale mapping and the one-inch map (1:63,360) from which the Quarter-inch map was derived, the life of this series was extended several times until finally replaced by a completely redrawn map at the scale of 1:250,000 in the 1960s. With the help of incomplete archives now in the Public Record Office and Cambridge University Library combined with a study of the maps themselves the final chapter of an official map established in the 1890s can be written.

Prior to the Second World War the standard Ordnance Survey motoring maps were those at the scale of 1:253,440 (A Quarter of an Inch to One Mile). The 9th edition of *A Description of Small Scale Maps* (1937) mentioned their usefulness being 'greatly increased by the re-arrangement of the sheet-lines, and by showing Ministry of Transport road numbers and classification'.¹ These were the Fourth Edition at that scale and carried a newly devised grid of squares 10,000 yards by 10,000 yards. In an attempt to set out a programme for the Ordnance Survey (OS), which had been desperately trying to revise increasingly out of date mapping in two decades marked by limited resources and remarkable expansion of suburbs outside most cities. The Davidson Committee appointed in May 1935 by the Minister of Agriculture to whom the OS answered, reported in February 1938.² Even while the

committee was deliberating it was recognised that the Quarter-inch map needed redrawing but that it could not be considered apart from the One-inch and Half-inch maps.³ It recommended no change in the range of small scale maps, but did recommend that a grid based on the international metre be superimposed on nearly all OS maps. The Committee noted that the Quarter-inch map was revised in step with the revision of the One-inch map. In so far as the One-inch maps of the late 1930s had been fully revised, chiefly only in the south of England where a new edition of the One-inch map was being introduced and in Scotland in the 1920s, the Quarter-inch map could consequently benefit from this revision. However the production of the Quarter-inch map on a new projection which involved some photographic adjustment took priority over the revision from more recent One-inch mapping. The Committee optimistically considered that the revision of maps derived from the One-inch map had not lagged far behind development (i.e. change of use to built-up land) and recommended no change in procedures which entailed complete revision every 15 years.

By May 1939 the Director General OS decided that a metric grid should not be added to the Quarter-inch map until it had been added to the One-inch maps from which it was revised.⁴ He also mentioned the possibility of changing the scale from 1:253,440 to 1:250,000 but deferred a decision on this until redrawing the Quarter-inch map came up for consideration. Some trials were carried out with one map (England and Wales, 7) with a metric grid and with varying colours of contours. The file then falls silent until March 1944, when it was decided to keep the grid separate from the detail to allow for the production of gridded and ungridded editions.⁵

Production of the Quarter-inch map with National Grid

The new Director General, Brigadier G. Cheetham, revealed OS planning for the near future noting that the Quarter-inch map was to be published in the same format as before the war, but with a metric grid. A revision carried out before and during the war is being incorporated.⁶ Part of the justification for producing a new version of the Quarter-inch map was the requirement to make the military edition with a War Office Cassini grid available for Scotland in early 1944. Similar sheets for England and Wales were made available in July 1944. These were described in the OS unpublished annual reports as 'War Revision' and from the evidence of a single sheet (E&W. 6 North Midlands and Lincolnshire) were issued in plain card covers priced 3/- mounted on linen. The unpublished OS annual report for 1944-45 reveals that a start had been made on the new fourth edition of the Quarter-inch map but little progress had been made.⁷ All the original negatives for the series had been destroyed by enemy action, but could be reconstructed from prints made from the original negatives on white, enamelled zinc plates which had been stored in a secure place. Two of the 18 sheets covering Britain appeared in 1945, the rest in 1946. The sale prices printed in the margin of the earliest editions were cancelled by a label printed in blue giving new prices from 1st September 1945. Only sheet 11 was published before that date. More precise dates of publication can sometimes be obtained from the OS's monthly Publication Reports. In December 1946 Cheetham wrote to the Deputy Director General to congratulate the staff on the almost complete production of the new map, particularly for the preparation and reprinting of the layer (relief) plates which very successfully kept an even tone from sheet to sheet allowing the maps to be assembled as a general wall map.⁸

Folded maps continued to be published in long, Michelin type format. Maps were sold unmounted and flat, unmounted and folded, mounted and folded and dissected, then mounted and folded all in standard covers following a design established before the war. In January 1947 customers were warned that mounting cloth was in short supply and that orders for paper folded would be dealt with more quickly. Such shortages continued to plague this series in 1947 and occurred again in 1951. New roads built in the late 1930s and areas of suburban expansion can be detected for example around Portsmouth as well as in the major conurbations. Although the original editions had No town plans (traffic diagrams) they were tipped into the folded maps from 1948 onwards. These were never revised and were finally removed in the late 1950s. There was also an outline edition in black or black and grey only which omitted all the classification detail on roads.

The chief difference between the National Grid version and the original edition lay in removing the faint buff colour from the layer below 200 feet (61m) and the lightening of the graded buffs and browns in the higher layers. The layer scheme for the new series of maps was simplified when

compared with that on the original version of the 4th edition.

Original layer scheme	National Grid version
3600ft	
3200ft	
	3000ft
2800ft	
2400ft	
2000ft	2000ft
1600ft	
	1400ft
1200ft	
	1000ft
800ft	800ft
600ft	600ft
400ft	400ft
200ft	200ft

Changing from the yard to the metric grid and the addition of information in the margin by way of explanation was effected in exactly the same style as on the original edition. Following a period of consultation with motoring and cycling organisations and others a start was made on redesigning the map so that it could be redrawn as had been intended since before the war.⁹ Three experimental schemes survive, two of which were based on the previous Third and Fourth editions. The other one follows improvements made on the post-war National Grid version, but on all of them the road widths are more distinct and clearer, and all the place names and other lettering is larger and easier to read.

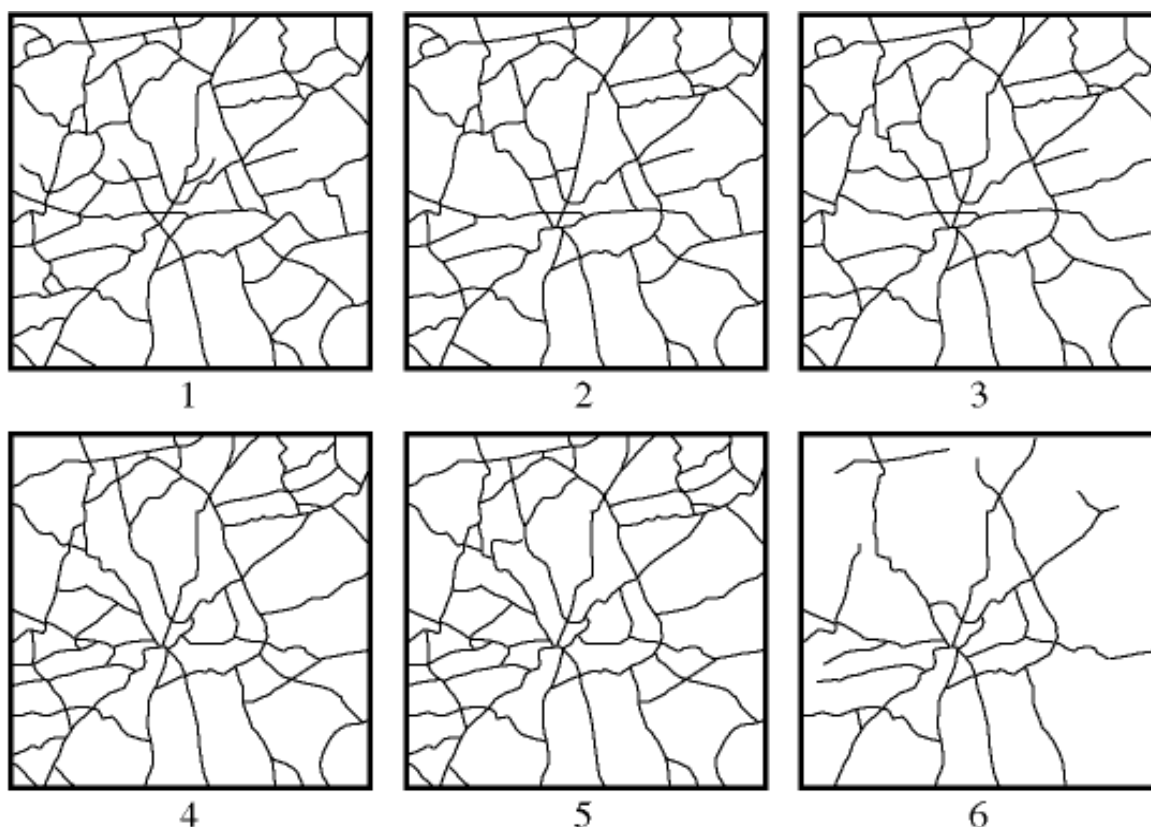
By 1950 it appears that the idea of a complete redrawing of the series had been put to one side, in favour of improving the existing map. In November the Directorate of Military Survey submitted a long memorandum to OS on ways of improving the map for users.¹⁰ By the end of 1951 changes to the way in which the grid values were given in the northern and southern margins by turning them horizontal and by simplifying those values by eliminating small redundant figures, were approved by the Director Map Production. At the same time the elaborate magnetic variation diagram was simplified to show only the difference between Grid North and Magnetic North which was required by users. Other details were relegated to a text description where the year of the magnetic variation provided the only reliable way of dating the printing. These improvements begin to appear on maps printed in 1952.

Imprints have changed several times. The initial ones indicate the hundreds printed, year and the place where printed, e.g. 20,045/Ch (20 thousand, 1945, Chessington). From January 1947 so-called unique numbers were allocated to the entire series. New four digit numbers were given to new editions. From 1952¹¹ a new system of indicating editions was extended to the each map (e.g. E, E/ or E// in which a change of letter represents what the OS regarded as a new edition, the lines beneath the letter indicates some minor corrections.

The first major change in content was made in 1949 on Scotland sheet 4, when it was extended to include the southern ends of the Kintyre peninsula and the Isle of Arran. This was very much for the convenience of those in those areas who looked to Glasgow as their main centre for business. This was reported as being *Öin handÓ* in the unpublished OS Annual report for 1946-47.¹²

Change in the detailed content of the minor road pattern began to take place from 1951. It is most noticeable on England & Wales sheets 10 and 11 where there had been a dense network of minor roads, lanes and tracks many of which were present on the original editions published before 1900. Figure 1 illustrates the effect of clearing the excessively detailed base for a portion of North Devon and compares it with the road patterns in the preceding editions.

Figure 1. The Pattern of roads around Holsworthy, Devon, depicted on editions of the Quarter-inch maps of the Ordnance Survey between 1901 and 1952. Original scale 1:253,440. Each square represents 10km by 10km.



Explanation. 1. Geological base map, 1901. 2. 1st edition 1903. 3. 2nd edition 1913. 4. 3rd edition, 1919. 5. 4th edition, both with yard grid, 1935 and National metric grid, 1946. 6. Cleared version of the 4th edition with National Grid 1952.

So far there are no clear indications of why this major improvement to the legibility of the map took place then. All sheets were subject to some degree of clearance. It is most likely that the two sheets most affected had been modified by duffing out roads not wanted on a redrawn new series that had been planned since 1947 but put on ice while other more pressing tasks were carried out. Overhead transparencies accompanying the presentation of this paper show the extent to which roads were deleted from the detail and, to a much lesser extent, where new roads had been added. After experimentation, laser-printed copies of the cleared, or later states of the map were printed on acetate sheets in royal blue. When superimposed over the uncleared, original edition the degree of change was comparatively easy to observe and record. This is preferable to side by side examination of each grid square, although for some purposes this also has to be done e.g. when looking for railway station closures.

It can be concluded that typically of OS practice they had begun preparation for a new, clearer series of the Quarter-inch map on sheets in southern England. A relatively small amount of change in the minor road pattern can be detected on most of the other maps in the series from 1951. Close study reveals that the resulting simplified minor road pattern corresponds with those roads under 14 feet of metalling which are of good quality on the One-inch maps of the New Popular edition published from 1945 onwards. Such wholesale clearing of minor roads below this category is confined mainly to sheets England & Wales 10 and 11. It is possible that the full revision of roads in these areas had been undertaken before and during the war. Examination of the most recent states of the Fifth edition in the Holsworthy area rules out a straightforward connection between the classes of road and those omitted when sheet 11 of the Quarter-inch map was cleared of detail. Oliver's discussion of the depiction of roads under 14 feet wide on the Fifth edition of the One-inch map points out that for the Ordnance Survey bad roads under 14 feet in width were untarred¹³. Inspection of the Yeovil and Blandford sheet of the One-inch 2nd War Revision (GSGS 3907) dated 1941 reveals that all those roads cleared from the 1951 state of Quarter-inch sheet 11 were roads under 14 feet of metalling in bad condition. This accords well with the same roads on sheet 178 of the New Popular edition of the

One-inch map. In general however the elimination of bad roads seems not to have been carried out even for all the areas where revision had been undertaken, for example on those One-inch Sixth edition maps printed before the summer of 1940 but not published until 1945.

Thus it appears that the revision done for the One-inch map eventually found its way onto the Quarter-inch map. However it stayed virtually unchanged until the results of the next revision, undertaken for the Seventh series of the One-inch map became available. The only exceptions were major new roads and changes in classification or number, and the status of railway stations. The 15 years after the war saw many closures of minor branch lines and stations both on them and at intervals along main lines. However the High Street station at Staines was still shown, admittedly closed, as it was from 1916. When the Seventh series One-inch mapping had been completed it was then used for the redrawn Fifth edition of the Quarter-inch map from 1957 onwards.

Covers for the series were produced in bulk and do not necessarily reflect the date of printing of the map inside them. In general there are two styles reflecting the change in the National Grid system whereby 100km squares were indicated by two letters rather than numbers. The long format of 32cm by 12,5cm well suited to the luggage nets inside the roofs of pre-war limousines, were cumbersome and dated. The varying size of the sheets in the series also made opening them somewhat of a lottery, often with an irritating second fold hiding the conventional signs and other marginal information.

During the war an outline version in grey was produced for official purposes. It is printed in grey with blue for water line features including the limits of reservoirs and lakes. It also has a metric grid called THE ORDNANCE SURVEY GRID but was never on sale or used by the military for fear of confusion between the two grid systems. Exceptionally sheet England & Wales 9 of this series has a skeleton grid in blue. There were other editions apart from the fully coloured edition: an outline version in black without contours published simultaneously with the fully coloured style; a version with the administrative boundaries in Scotland overprinted on the base map from about 1947; and a print of water and contours in blue and brown only, intended for teaching physical geography. Several editions of the military issues of this map are known, but not all sheets have yet been recorded. Essentially the same mapping, but with a military grid in purple is overprinted on top of the National Grid. Some of these have air information added to them in blue: others were intended for manoeuvres. Details of these are given by Hellyer (1999)¹⁴ in sections 56 M 9-14 and 60 M 6-10.

Harley argued in 1975 that the Fourth edition sheets were becoming overcrowded.¹⁵ In fact they were always overcrowded and hard to read. It was the war and post-war reconstruction which gave priority to other OS projects which allowed such a poor map to survive for so long.

Appendix

Known states of the Ordnance Survey Quarter-inch Fourth Edition (with National Grid)

1	2	3	4	5	6	7	8	9	10
England & Wales sheet 1 (common to Scotland) The Border									
23046/Cr		Coloured	1946	No	No	B	1946	8/46	1922
B		Coloured	1952	Yes	Yes	D	1946		1922
England & Wales sheet 2. North Central									
20046		Coloured	1946	No	No	B	1946	9/46	1921
2028		Coloured	1951	Yes	No	B	1946		1921
A//	No	Coloured	1959	Yes	Yes	E	1946		1921
England & Wales sheet 3. England, North East									
20046/Cr.		Coloured	1946	No	No	B	1946	7/46	1920
2029		Coloured	1951	No	No	C	1946		1920
A//	Yes	Coloured	1959	No	Yes	E	1946		1920
England & Wales sheet 4. North Wales and Manchester									

20046		Coloured	1946	No	No	B	1946	8/46	1919
2025		Coloured	1949	Yes	No	B	1946		1919
2030		Coloured	1951	Yes	No	C	1946		1919
D	Yes	Coloured	1952	Yes	Yes	D	1946		1919

England & Wales sheet 6. North Midlands and Lincolnshire

20046/Cr.		Coloured	1946	No	No	B	1946	5/46	1920
2026		Coloured	1950	Yes	Yes	B	1946		1920
2036		Coloured	1952	Yes	No	C	1946		1920
C/	Yes	Coloured	1960	Yes	Yes	E	1946		1921

England & Wales sheet 7. South Wales

20,046/Cr.		Coloured	1946	No	No	B	1946	5/46	1919
2027		Coloured	1950	Yes	Yes	B	1946		1919
C		Coloured	1952	Yes	Yes	D	1946		1919

England & Wales sheet 8. Midlands

20046/Cr.		Coloured	1946	No	No	B	1946	3/46	1915
2023		Coloured	1946	No	No	B	1946		1915
2031		Coloured	1951	Yes	Yes	C	1946		1915
D		Coloured	1952	Yes	Yes	D	1946		1915
D/	No	Coloured	1960	Yes	Yes	E	1946		1915

England & Wales sheet 9. East Anglia

20,046/Cr.		Coloured	1946	No	No	B	1946	3/46	1930
2024		Coloured	1946	No	No	B	1946		1930
2032		Coloured	1951	Yes	Yes	C	1946		1930
C		Coloured	1952	Yes	Yes	D	1946		1930
C/	No	Coloured	1958	Yes	Yes	E	1946		1930

England & Wales sheet 10. England, South West

23046/Cr.		Coloured	1946	No	No	B	1946	2/46	1930
2020		Coloured	1946	No	No	B	1946		1930
2039		Coloured	1952	Yes	Yes	D	1946		1930
A//	Yes	Coloured	1958	Yes	Yes	E	1946		1930

England & Wales sheet 11. England, South

20,045/Ch		Coloured	1945	No	No	A	1945	8/45	1930
2021		Coloured	1945	No	No	B	1945		1930
2033		Coloured	1951	Yes	Yes	C	1945		1930
E		Coloured	1952	Yes	Yes	D	1945		1930
E/	No	Coloured	1959	Yes	Yes	E	1945		1930

England & Wales sheet 12. England, South East and London

25045/Ch		Coloured	1945	No	No	A	1945	10/45	1930
2022		Coloured	1945	No	No	B	1945		1930
2034		Coloured	1951	Yes	Yes	C	1945		1930
D		Coloured	1955	Yes	Yes	D	1945		1930
D/	Yes	Coloured	1958	Yes	Yes	E	1945		1930

Scotland sheet 2. Scotland, South West

200 46		Coloured	1946	No	No	B	1946	8/46	1923
A/	Yes	Coloured	1960	Yes	Yes	E	1946		1923

Scotland sheet 3. The Forth, Clyde and Tay

20046.Cr		Coloured	1946	No	No	B	1946	4/46	1923
B/	Yes	Coloured	1957	Yes	Yes	D1	1946		1923

Scotland sheet 4. Glasgow and the Middle West

15046/Cr.	Coloured	1946	No	No	B	1946	3/46	1923
2019	Coloured	1948	No	No		1946		1923
2040	Coloured	1952	Yes	Yes	D	1946		1923
A//	Coloured	1957	Yes	Yes	D	1946		1923
A///	Yes Coloured	1959	?yes	Yes	E	1946		1923

Scotland sheet 5. The Eastern Highlands

15046	Coloured	1946	No	No	B	1946	9/46	1925
B	Coloured	1952	Yes	Yes	D	1946		1925

Scotland sheet 6. Skye and the Outer Hebrides

15046	Coloured	1946	No	No	B	1946	11/46	1927
A/	No Coloured	1960	Yes	Yes	E	1946		1927

Scotland sheet 7. Scotland North

15046	Coloured	1946	No	No	B	1946	12/46	1927
A/	No Coloured	1958	Yes	Yes	D	1946		1927

Scotland sheets 8 & 9 (combined on one sheet) Orkney and Shetland Islands

5046	Coloured	1946	No	No	B	1946	12/46	1928
2035	Coloured	1951	Yes	?	B	1946		1928

Explanation of the columns above.

1. Imprint or print-reference code. These include the pre-war method of showing the size of the print run in hundreds and the last two digits of the year, sometimes followed by a code for the place of printing. These were replaced by four digit Öunique numbersÖ often pre-allocated in batches. These were finally replaced by a letter to indicate an edition qualified by a line underneath it to mark minor changes. In general this series does not contain much explicit information about what changes have been made.

2. Presence or absence of town plans or traffic diagrams. These are always dated 1948 and were abandoned in the late 1950s when it was patently obvious that the traffic lights, one-way streets and other detail were out of date. All fully coloured sheets are known with town plans. The original printings from 1945 and 1946 had no town plans. Only those final printings from the late 1950s are shown with or without town plans, demonstrating some inconsistency.

3. Coloured or outline editions. All the states listed here as coloured are printed in ten colours.

4. Date of the magnetic variation. This was originally shown in a diagram, but in later states it is incorporated in a text note in the bottom right hand border. This is often the only way of dating the printing.

5. Some detail cleared usually from the minor roads, but some new minor roads added.

6. Re-positioning of the grid values along the northern and southern margins of the sheet to make them right-reading.

7. Price stated on the map. The letter codes

The following regimes were in force, the first (A) up to 31 August 1945. Subsequent changes were introduced on 1 September 1945, 1 July 1950, 1st July 1952, mid-1956, 1 July 1958

Code	Paper flat	Paper folded	Mounted & folded	Dissected	Outline
A	2/-	2/3	3/-	4/6	1/6
B	2/6	2/9	3/9	6/-	2/-
C	3/-	3/9	6/3	10/6	3/-
D	3/-	5/-	8/-	-----	3/-
D1	3/-	[5/-]	[]	-----	[]

E 3/6 [5/6] [8/-] ----- []

Under E prices are given on the map itself for paper flat versions, other formats are usually indicated on the covers. Prices in square brackets are deduced from covers and price lists. v after a price indicates that it is made by a violet hand stamp, pv after a price indicates that the price in the table is printed on the map, but that it has been increased to 3/6 by a violet hand stamp. b after a price code indicates that it was updated by a blue label. On the covers prices are often altered by labels carrying the new prices, sometimes more than once.

8. Publication date as stated on the map.

9. Supplementary information on date of publication. This is essentially the month in which the map is reported as published in the OS Publication Reports. These were issued monthly hence their date is the month and year of that report. Unfortunately only the announcement of the first publication of each sheet is given. None of the subsequent states of these maps merited an entry in the later reports.

10. Date of full revision.

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¹ Ordnance Survey of Great Britain, 1937. *A Description of Small Scale Maps*, 9th edition. Southampton

² Ministry of Agriculture and Fisheries, Final Report of the Departmental Committee on the Ordnance Survey. Chairman, Viscount Davidson. HMSO. 1938, reprinted 1946.

³ Public Record Office (PRO) OS1/54. 1932-1939. 1/4" Map Series.

⁴ PRO. OS1/382. 1939-1951. 1/4" to 1 Mile Map with Metric Grid 4th Edition Great Britain. Minute 2. 25/5/1939

⁵ PRO. OS1/382. 16A. 28/3/1944

⁶ Cheetham, G. 1946. New Medium and Small Scale Maps of the Ordnance Survey. *Geographical Journal*, 107 (5&6) 211-224. Read to the Society, 10 December 1945.

⁷ Ordnance Survey Annual Report for 1944-1945. Unpublished.

⁸ PRO. OS1/382 DGOS to DDG OS.17A. 14/12/1946

⁹ PRO. OS1/426. 1947-1949. 1/4" Regular Series Design. This file contains minutes and colour proofs of different design options for a redrawn series of maps at the Quarter-inch scale and begins in mid 1947

¹⁰ PRO. OS1/382. 26. Memorandum by Military Survey 22/11/1950

¹¹ R.R. Oliver (2000) in *A guide to the Ordnance Survey one-inch New Popular Edition* (Charles Close Society) says that the edition letters for small scale maps were introduced in April 1953. If this is correct, it would indicate that the maps whose Magnetic Variation details are dated 1952 were not published until 1953.

¹² Ordnance Survey Annual Report for 1946-1947. Unpublished.

¹³ Oliver, R.R. 2000. *A Guide to the Ordnance Survey one-inch Fifth Edition*. (Charles Close Society) p.23

¹⁴ Hellyer, R. 1999. *Ordnance Survey Small-Scale Maps Indexes: 1801-1998*. Kerry (David Archer)

¹⁵ Harley, J.B. 1975. *Ordnance Survey Maps a descriptive manual*. HMSO for Ordnance Survey