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“Grid colours”

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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.

Grid colours

Richard Oliver

In the latest of his useful contributions on military matters, Mike Nolan asks why it is that a blue grid is used on the OS 1:50,000 (military series M.726).¹ The short answer is: ‘cartographic design and economy in printing’.²

There are two considerations in the ‘gridding’ of a map: one is the functional one, of ensuring that the grid or reference system is easily legible; the other is the economic one, of ensuring economy in printing. If a series functions either as a wholly civil or as a wholly military one, or – like the OS 1:50,000 – as a joint civil-military series, then design is much easier than if one basic series is issued in separate civil and military versions. This can be demonstrated by briefly considering the development of the ‘one-inch family’ – 1:63,360 and 1:50,000 – civil and military map series in Great Britain between the 1910s and the 1980s.

When Colonel Close began re-designing the 1:63,360 map in 1912 there was apparently no thought of producing separate civil and military versions, and what emerged as the ‘Popular Edition’ in 1918-19 seems to reflect this: the two-inch squaring, on the black ‘outline-and-names’ plate, was designed for military needs, but was available for civil use.³ However, at the same time the Army adopted the ‘British System’ Cassini ‘Dunnose’ metric grid, and from 1923 the Popular Edition was printed in an alternative version for military use. This military version omitted the squaring and carried the ‘Dunnose’ grid in purple: this striking colour may have been chosen in order that the grid could easily be read against the other, rather strong, colours of the parent map. Although from 1931 there was a wider divergence between civil and military practice, with the military version using a modified colour scheme and now carrying GSGS serial numbers – 3907 for England & Wales, 3908 in Scotland – as well as the Modified British System (MBS) grid, the two versions continued to depend on one basic set of material: evidence of this is sometimes to be seen in the incomplete removal from military printings of the two-inch squaring characteristic of the civil version.⁴

In 1940-44 most of GSGS 3907, and a little of GSGS 3908, were reissued in a ‘Second War Revision’ that was designed for military use only.⁵ Presumably to facilitate speedy printing, the map was designed to be printed in four colours (pre-war printings had required five to eight printings): the grid lines were in black on the outline-and-names plate, and the grid figures were in blue on the water plate.

¹ Mike Nolan, ‘Grid colours on military maps’, *Sheetlines* 98 (2013), 34-7.

² This article amounts to a summary only of the development of ‘the military one-inch’: for details see Roger Hellyer & Richard Oliver, *Military maps*, London: Charles Close Society, 2004.

³ Yolande Hodson, *Popular maps*, London: Charles Close Society, 1999, 74ff.

⁴ See for example on the foreshore on GSGS 3907 sheet 28, ‘WO 1250/33’, and sheet 57, ‘1000/36.3500/39’.

⁵ From 1943 GSGS 3907 and 3908 were available to civilians, but this does not detract from their being purely military mapping in concept and design.

In 1937-8 the OS began work on remodelling the 1:63,360 map so that the civil version could easily be adapted for military purposes: the 'New Popular Edition'. As there was expected to be some civilian opposition to a 1km interval grid dominating the map, light rouletted lines were used. These were adequate in open areas, but were not very legible in built-up ones. Evidently this was not to the Army's liking, as the standard military version of the New Popular, GSGS 4620, had the grid – now the Transverse Mercator National Grid – overprinted in purple.

In 1947-51 there was a further redesign of the one-inch, resulting in the Seventh Series. The civil and military versions used the same basic drawing, but there appear to have been separate sets of plates. At first the civil version was printed in ten colours and had a grey grid: the military version had a black grid, on the 'outline-and-names' plate, and was at first printed in eight colours, with blue grid figures, and then in six colours, with red grid figures. From 1961 the civil version was also printed in six colours, and the military version now differed only in addition of the red grid figures and some marginalia, also in red. The blue figures had been on the 'water-outline' plate; the red figures were on the 'first-class roads' plate.

The basic principle of a minimal modification of the basic civil design for military use was followed when the design of the 1:50,000 map – military version M.726 – was worked out in *circa* 1968-72. In order to make the map as 'transparent' as possible, whilst at the same time economising on printings, the grid was in blue, on the 'water' plate: military printings added grid figures on the map face in blue. Thus the choice of colour was a combination of clarity in design and economy in printing.⁶ From 1981 the 1:50,000 was produced to what was grandly announced as a joint-civil-military specification, which really amounted to little more than grid figures on the map face – a belated convenience for civil users – and a little additional marginalia. The 1:50,000 therefore came full circle to the original concept of 1912-14 for what became the Popular Edition.

Although the Transverse Mercator National Grid continues to be the standard reference system in Great Britain, a few 1:50,000 sheets have been produced with the Universal Transverse Mercator (UTM) grid for military training purposes. On GSGS 5670, which is based on standard printings of M.726 with blue grid, the UTM grid is overprinted in purple, presumably to provide maximum contrast.

The treatment of the grid on 1:63,360 military mapping of Ireland reflects practice in Great Britain. The series produced for Northern Ireland from 1931 onwards, GSGS 3917, was based on a mixture of civil material, and carried a purple grid, no doubt so as to assimilate its style as closely as possible to GSGS

⁶ After abortive experiments in 1972, in 1977 four-colour process printing was adopted for the 1:50,000, with both water and grid on the cyan plate. For the evolution of 1:50,000 design see J.G. Price, 'A review of design and production factors for the Ordnance Survey 1:50,000 map series', *Cartographic Journal* 12 (1975), 22-9.

3907-8.⁷ The wartime all-Ireland, series, GSGS 4136, resembled the Second War Revision in Britain in that it was produced purely for military use and had black grid lines on the 'outline' plate and red figures on the 'roads' plate. In 1965 GSGS 4136 was replaced by M.723: this was a military version of the Ordnance Survey of Northern Ireland 1:63,360 Third Series, and carried a purple grid, presumably to ensure legibility in conjunction with the hypsometric tinting of the parent map. This in turn was replaced from 1979 by a 1:50,000 series, M.728, which resembled M.726 in that blue figures were added to a basic blue grid.

Purple grids or graticules were standard on inter-war 1:253,440 military and aviation mapping, presumably both for legibility against hypsometric tinting and because of dependence on 'non-gridded' civil material. In contrast, GSGS 4042, of North-West Europe, which was produced from 1936 for military use only, carried a black grid with blue figures, enabling an 'integrated' approach to map design (no layers) and printing (no alternative civil version). Although the 'Dunnose' grid continued to be the standard in Britain until 1950-1, sheet 1 of GSGS 4042, which extends across the Channel into south-east England, carries the Nord de Guerre grid throughout. Can anyone explain this?

The accompanying extract (*below*) shows that the mapping of Britain in GSGS 4042, which reused material drawn on the Delamere meridian, lay at a marked angle to the Nord de Guerre grid.



Extract from GSGS 4042 sheet 1 (25,000/R/40), with Nord de Guerre grid; sheet lines conform to the grid

⁷ Five sheets were in a style, including coloured roads and contours, similar to GSGS 3907-8; the remainder were in black, with purple grid.