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“Ticking the boxes? Sustrans cycle-
touring mapping”

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‘Ticking the boxes’? Sustrans cycle-touring mapping

Richard Oliver

Mapping suitable for cycle-touring and the intimately related subject of national topographic cover at scales in the range 1:100,000-1:126,720 (‘half-inch’) has been discussed in *Sheetlines* and elsewhere on several occasions since 1998.¹ Most of these comments were published before GPS in its various forms became widely used, but the issue of the mapping that is discussed here shows that electronic devices have not superseded paper maps.² In short the qualities necessary for a completely successful map suitable for cycle-touring are:

1. A scale in the range 1:100,000 to 1:126,720: this affords a balance of breadth of cover and necessary detail in British and Irish conditions.
2. Contouring at an interval of 20 to 30 metres.
3. Depiction of the complete rural sealed-surface road network.
4. Indications of bridleways suitable as alternatives to ‘on-road’ cycling.
5. Indications of official cycle-routes and cycle paths.
6. Indication of landmarks, particularly churches, to aid navigation.
7. Complete national cover, rather than simply ‘tourist honeypot’ areas.
8. Inclusion of the National Grid in conveniently-sized squares on the map face.
9. Up-to-date in essential features.
10. The cartography should be clear and legible, enabling the maximum of information to be abstracted from the map.

It is to be noted that there is a difference between general-purpose mapping suitable for cycle-touring, such as the Ordnance Survey half-inch Second Series, abandoned in 1961 after only a few sheets had been prepared, and mapping designed exclusively for cycling. The first is of potentially much wider interest than is the second, which can only justify itself by complete fitness for purpose.

Of various maps, variously in sheet and atlas form, in the desired scale-range, published since around 1980, the nearest to approach the ideal are those by Mike

¹ Richard Oliver, ‘Ordnance Survey maps for the cycle-tourist’, *Sheetlines* 51 (1998), 14-31; David Forrest & Ewan Kinninment, ‘What might 1:100,000 scale national mapping of Great Britain look like?’, *Sheetlines* 53 (1998), 17-26; Christopher Romyne, ‘A cycling map’, *Sheetlines* 54 (1999), 5-6 [a review of Mike Harrison’s 1:100,000 *Herefordshire*]; Lionel Hooper, ‘Ordnance Survey publishes 1:100,000 maps’, *Sheetlines* 58 (2000), 16-18; Richard Oliver, ‘A disappointing morsel’, *Sheetlines* 58 (2000), 18-22; Richard Oliver, [review of Mike Harrison’s *Cycle and Leisure Map Cornwall* and *Cycle and Leisure Map Devon*], *Sheetlines* 74 (2005), 45; Richard Oliver, ‘A few new maps’, *Sheetlines* 78 (2007), 61-2; Richard Oliver, ‘The later Ordnance Survey half-inch maps: some points of detail’, *Sheetlines* 92 (2011), 23-28 [important for bridleways]. Three articles in *Cartographic Journal* 38 (2001) are also relevant: David Forrest & Ewan Kinninment, ‘Experiments in the design of 1:100,000 scale topographic mapping for Great Britain’, 24-40; A Willemijn Simon van Leeuwen, Corné PJM van Elzakker and Edwin Massop, ‘Investigations into the use of Dutch cycling maps and their results’, 41-7; Richard Oliver, ‘Mapping for cycle touring: past, present and a possible future’, 48-60. Paul Franklin, ‘Maps for the reluctant’, *ibid.*, 87-90, defends the OS ‘Tour Map’ series, but does not engage with the ‘cycle-map problem’.

² For a ‘mapless’ journey of 1077 km across north-west Europe, navigating by smartphone, see Jon Lubikowski, ‘London to Copenhagen by bike’, *Maplines* 24 (2) (Summer 2015), 8-9.

Harrison, published by Croydecycle, which cover all the country to the west of a line from Bridgwater to Bridport (*figure 1*).³ Their one substantial fault is that the National Grid is only indicated in the margins; otherwise they are a template, in design and content, for national mapping at 1:100,000. The cartography is clear and information is conveyed in a ‘conversational’ manner: there is none of the over-emphasis, shouting, screaming, attention-seeking or outright hysteria from which not even the 1:50,000 *Landranger* and 1:25,000 *Explorer* series are wholly free.⁴



Figure 1. Extract from South Devon, published by Croydecycle, © 2010. Contours at 30 metre intervals; tourist symbols in green, including ‘beer mugs’ for public houses

Thus a map series at 1:110,000 designed especially for cyclists, which at present covers most of England and Wales, ought to be a significant addition to national cartographic infrastructure, and asks to be judged by the ten qualities set out above.⁵ The maps are prepared and published by FourPoint Mapping, and include both Ordnance Survey and OpenStreetMap data. An extract is shown in figure 2. They are printed double-sided on glossy paper, at A1 size folded down to A6, with 1:110,000 mapping on one side, covering a basic area of about 87 by 69 kilometres, with bleed edges, and on the other the integral cover, some street maps, recommended day rides, and other information, and a few photographs. Roads are ‘white’, reversed-out against relief in shades of green and brown; settlements are grey, water is blue, and woodland is darkish green. All

³ See www.croydecycle.co.uk for current publications and prices.

⁴ The faults here are of over-emphasis of some cycling, tourist and access information, and are considerably worse on the *Landranger* than on the *Explorer*.

⁵ This review is based on copies of *Sustrans pocket-sized guide to the National Cycle Network 2 South Devon Cycle Map* (ISBN 9-781900-623230; © 2014) and *ibid 27 Lincolnshire and Wolds Cycle Map* (ISBN 9-781900-623445; © 2014), purchased by the writer for £4.99 each.

measurement of miles. A ‘bastard’ scale such as 1:110,000 conforms to neither category, and it is difficult to understand why it has been adopted, as the detail shown could easily be accommodated at 1:125,000 or 1:126,720: the former is preferable, as more readily accommodated to metric measurement.⁸

2. These maps are certainly contoured: but at what interval? They are hypsometrically tinted at 100 metre intervals. Counting contours between layers, and comparison with OS 1:50,000, suggests an interval of 10 metres, and possibly 5 metres in lower-lying areas such as around Grimsby and the Lincolnshire marsh, but this is nowhere stated, and there are neither contour figures nor spot heights. The source of the contours is not apparent: some seem to conform to OS ones, but there are others, notably on hill-tops, which do not. The highest point in Lincolnshire and an area west of Grimsby are cases in point: see figures 3 and 4. The overall effect of the contouring is ‘busy’ and, *pace* the claim of ‘Easy to read contours’ on the cover, does not conduce to legibility vis-à-vis the roads. Shapes are certainly well shown, but absolute height at a given location is very difficult to determine. What ought to be the greatest strength of this mapping proves at best a puzzle, at worst a frustration.



Figure 3. Extracts from (A, left) Sustrans pocket-sized guide to the National Cycle Network 27 Lincolnshire and Wolds Cycle Map, © 2014

(B, centre) OS 1:50,000 Landranger sheet 113, edition D3, © 2012

(C, right) OS 1:25,000 Explorer 282, edition A1, © 2006, showing the highest point on the Lincolnshire Wolds

The apparent discontinuities in the contours in (A) are on the original. The scales have been changed to aid comparison

⁸ An advantage of Imperial scales, or ‘modified rational’ scales – for example 1:62,500 and 1:125,000 rather than 1:63,360 and 1:126,720 – is that they consume two-thirds less paper than do ‘metric’-scale maps – 1:50,000 and 1:100,000 respectively – and are thus more ‘portable’.



Figure 4, left. Extracts from (A, top) *Sustrans pocket-sized guide to the National Cycle Network 27 Lincolnshire and Wolds Cycle Map*, © 2014

(B, centre) *OS 1:50,000 Landranger sheet 113, edition D3*, © 2012

(C, lower) *OS 1:25,000 Pathfinder 720 (TA 20/30), edition B*, © 1989, showing 'bills' to the south of Healing

The scales of have been changed to aid comparison.



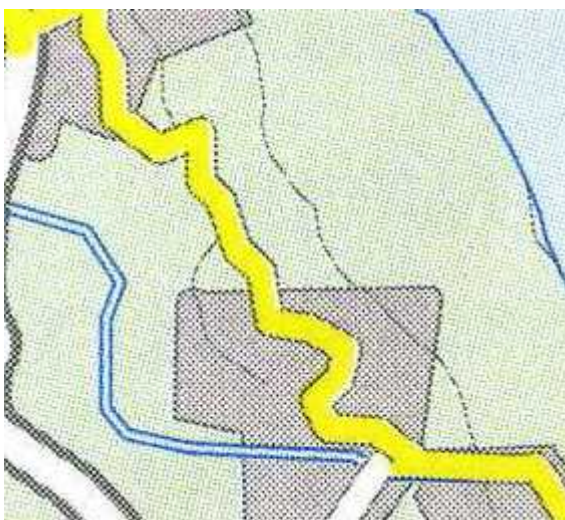
Figure 5, below

Extracts showing the gas terminal at Theddlethorpe and the road and path network to the east

(A, left) *Sustrans pocket-sized guide to the National Cycle Network 27 Lincolnshire and Wolds Cycle Map*, © 2014

(B, right) *OS 1:50,000 Landranger sheet 113, edition D3*

The scales of have been changed to aid comparison



3. The rural road network appears to be notionally complete, though there is an oddity near the ‘unnamed’ Theddlethorpe gas terminal, where the road from TF 481886 at 486880, instead of carrying on towards the shore at 489882 (as shown on current OS *Landranger* mapping and known to the writer for over fifty years), instead is shown as heading to a junction at 491870 (figure 5): I have cycled this in the past but, unless something has changed very recently, it is hardly ‘on road’.⁹ The complicated system between Ashburton and Totnes, in SX 76, seems to be complete, unlike on the OS ‘Tour’ 1:100,000 of 2000 which, being based on 1:250,000 data, omitted some roads – a negation of the choice of scale. However, ‘unnumbered’ roads are simply classed as ‘Minor’, with no division as to width. In 2000 the OS upgraded its 1:250,000 data to distinguish between roads over and under 4 metres (13 feet) in width and, whilst this is hardly perfect – 5 metres (16 feet) seems more appropriate to modern traffic – it is better than nothing in drawing attention to narrow roads.¹⁰
4. No bridle ways are shown.
5. The National Cycle Network ‘On-road’ and ‘Traffic-free’, ‘Other traffic-free’ and ‘Recommended routes on-road’ are indicated; all but the last are the most prominent things on the map, and have the effect of pushing all the other road information into the background.
6. No landmarks as such are shown. This has the effect of accentuating the ‘spaghetti’ effect of the road network. Churches, especially, and structures with a vertical accent, such as water towers and communication masts, are punctuation marks both in the real and in the paper landscape. I find it difficult to believe that any map for way-finding that excludes churches, especially, can have been designed by anyone who has ever used a map in the field.
7. The series seems to be progressing northwards, and presumably complete national cover can be expected in due course.
8. The National Grid is shown at 5-kilometre intervals; there is no indication of 100-km square designations. It is possible to give references correct to 1 kilometre by estimation, but anything more precise – and 100-metre references are possible even at 1:126,720 – can only be done by actual measurement and calculation. This inability to be readily precise seems strange in a world of GPS.
9. An obvious omission from the South Devon sheet is the ‘new town’ at Cranbrook (SY 0095): some access roads are indicated, but there is no naming or building. This is a serious omission.

⁹ See OS 1:50,000 *Landranger* sheet 113, edition D3, © 2012.

¹⁰ The 4-metre standard is a metric adaption of the former 14-feet – 4.3-metre – standard, adopted in 1892, presumably as satisfactory for horse-drawn military convoy traffic.

10. The legibility of the map is compromised in two important respects. One is the width of the roads: the ‘minor’ ones are about 0.8 mm wide, as compared with about 0.6 mm and about 0.45 mm for roads over and under 4 metres in width respectively on the OS 1:50,000 *Landranger*, and about 0.55 mm and about 0.35 mm for ‘secondary’ and ‘minor’ roads on the Croydecycle 1:100,000 maps. Even in the Lincolnshire Wolds the contours are overwhelmed by the roads, yet every cyclist knows that in reality the roads are at the mercy of the contours and that the topography takes precedence over the traveller. Road widths should be as narrow as is consistent with legibility. The other important defect is the ‘boxing’ of point-symbols. Whilst the boxing certainly draws attention to the symbols, it has the drawback of masking underlying detail, including sometimes the road network, for example south-west of Newton Abbot (SX 8369). As with the omitting of ‘landmarks’, one does wonder if those responsible for the map anticipated its use on the ground.

Most of the ‘point’ symbols only appear in connection with towns or larger centres. An exception is ‘Attractions’: the depiction of these seems fairly comprehensive, although one questions the omission of the Trago outlet at SX 8274, and wonders quite how appropriate the ‘castle gate’ symbol is to the likes of Crealy Adventure Park (SY 0090) or Go Ape (SX 8884).¹¹ On the South Devon sheet, Greenway (SX 8754) is noted as belonging to the National Trust, but not so four others: A la Ronde (SY 0182), Castle Drogo (SX 7289), Coleton Fishacre (SX 9050) and Killerton (SS 9700).¹² Other symbols include Toilets, Supermarket, Cycle Shop, Pub, Café, Shop and Accommodation: these symbols are conspicuously lacking outside towns so, particularly in respect of rural pubs and shops, the map is less informative than it might be. Granted, rural pubs and shops, like petrol stations, post offices and public telephones, are in decline, but to include them only in towns is to omit showing them in areas where this information would be really useful. The fault is compounded by grouping the symbols under town names: the Hospital and Cycle Shop symbols, in particular, would be of more practical use were they shown in their true positions – and not boxed, so that their context is not avoidably obscured. Exeter airport (SY 0093) is not hinted at: this seems strange, even if it is only regarded as a landmark.

The Croydecycle maps were designed by a cyclist to be suitable for cycling, but are correctly described in their titling as ‘ideal scale for cyclists and drivers’. Indeed, I have covered many more miles and many more hours using them to navigate my other half in cars than I have pedalling. The cycle-specific information does not obtrude; these maps can reasonably be classified as ‘suitable for motoring’, and indeed general reference. As I have said before, they communicate at a conversational, unobtrusive level: I hesitate to say this of the Sustrans-FourPoint offerings, where the indications of cycle routes leave in the

¹¹ ‘Go Ape’ is an ‘Activity Centre’ on 1:50,000 *Landranger* 192, edition C5/, © 2013.

¹² ‘National Trust’ annotations seem comprehensive on the Lincolnshire sheet, map 27.

shade the thoroughly objectionable and obtrusive green dots that the OS *Landranger* uses for cycle routes, and which are thoroughly distracting for motor-navigation.

The supplementary urban maps are at an unspecified scale or scales – comparative measurement suggests around 1:12,000 – and concentrate on towns through which Sustrans routes pass: thus map 2 shows Exeter, Exmouth, Newton Abbot and Plymouth, but not Torquay or Paignton, and map 27 shows Lincoln, Newark, Scunthorpe and Sleaford, but not Cleethorpes, Grimsby or Skegness.¹³ These supplementary maps are printed on the reverse of the 1:110,000 mapping, so that the map must be turned: the glossy paper is of the sort used for printing publicity leaflets, and the amount of wear shown on the copies I have used indoors in writing this review, taken with other copies belonging to friends who have used them outdoors, suggests that a more durable grade of paper is needed. The day ride maps are also at an unspecified scale – somewhere around 1:90,000-95,000 – and the remainder of the ‘reverse’ is occupied by photographs, the function of which is unclear, and general information.

In summary, then, at first sight this Sustrans-FourPoint mapping ‘ticks boxes’ – at any rate, for scale, contours, road network and grid – but ‘box ticking’ is the fulfilment of the letter rather than the spirit, and it must be all too clear from what I have written that, once again, we have a ‘cycling map’ that this cyclist, at least, finds less than fit for purpose. The great pity is that the crystal-clear example of the Croydecycle maps has apparently failed to spark emulation.

See page 47 for details of Richard Oliver’s new book, British Town Maps.

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See <http://solo.bodleian.ox.ac.uk>

¹³ The Croydecycle maps also include supplementary urban maps, with scale-bars. *South Devon* includes them for Brixham, Dartmouth, Exeter, Kingsbridge, Newton Abbot, Plymouth, Salcombe, Tavistock, Teignmouth, Torquay and Totnes.