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“Observations on *Maps from the past 5*”

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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.

Observations on Maps from the past 5

Rob Wheeler

Introduction

The additional data presented as an overprint on the military map of East Anglia sheet 85 NE (Cambridge) 1914, published by the Society in 2014 as *Maps from the past 5* raises two questions:

- How was it collected? In particular, how much came from *ad hoc* survey and how much from the items of data that surveyors had been routinely collecting but which did not appear on the normal published maps?
- Was it fit for purpose?

The questions are by no means easy to answer, though much can be learned merely by inspection of the map.

Roads and bridges

Taking the different pieces of information in logical order, we start with road classification. The specification of widths is, as Richard Oliver observed, distinctly odd. The Hunter-Weston report of 1912¹ regarded 14 feet as the critical width to allow two lines of vehicles to pass at speed. That report actually proposed a ten-fold classification of roads which seems to have been the origin of the system which appeared on the one-inch Popular edition; but even with so elaborate a classification there was no consideration of widths other than 14ft, which had been a requirement for first class roads in the existing system. As for the source of the data, the widths might have been inspected on the ground but could have been obtained simply by measuring the width of the carriageway shown on the 1:2500 – though that might not have been altogether reliable. What does stand out is an attempt to be objective compared to the fuzzy, multi-criterion classification used on the civil maps. For example, the road from Cambridge to Histon is shown as first class not just to the station but right up to the fork by the chapel (7C.7,6); the road through Fulbourn, though hardly a ‘main road between towns’ is shown as first class, though dropping to second class as it passes through Home End (12G.8,1).

This leads on naturally to bridges. There was ample precedent on the continent for distinguishing bridges of wood, iron, etc. The idea was presumably to give an indication of the ease with which a bridge can be destroyed, by own forces or by the enemy. A wooden bridge might be felled by a man with an axe; a brick arch is vulnerable to a pick-axe. That at least was the idea. If one thinks of one of Brunel’s timber viaducts with 12 inch by 12 inch timbers springing from stone piers and with the decking perhaps replaced by mild steel, one gets an idea of the problems sometimes faced by the surveyor, and by the man with the axe. But the surveyor (or at least the one-inch reviser) had been given a fairly clear

¹ Copy at TNA WO 33/3265. I am grateful to Richard Oliver for drawing my attention to this and other relevant material; he should not be held responsible for the deductions I have drawn.

definition,² and Cambridgeshire, in any case, lacked Brunel viaducts.

Recording the width of carriageway at bridges seems superfluous, except in the rare cases when the bridge was disproportionately narrow for the class of road, or too narrow to take a towed gun. It is true that the Hunter-Weston Report had been keen for maps to show the width of bridges, even though they recognised that this was impracticable at the half-inch scale; however, it is apparent from the context that they sought this information only when the road narrowed suddenly at a bridge. Width information could again have been taken from the 1:2500.

What was the source of the information on the material of which bridges were constructed? The obvious source would have been the data collected in the course of one-inch revision. However, the instructions that survive for this combined brick and stone as Masonry (M) bridges and directed that 'S' should be used for suspension bridges; the new map took no interest in suspension bridges – not exactly common in East Anglia – and required Brick (B) and Stone (S) to be distinguished. That suggests *ad hoc* survey. At this point it is useful to see what the map has to say about a couple of the Cambridge bridges. Magdalene Bridge (8E.2,1) is marked as B.18'. Pevsner³ in contrast tells us that it is a cast-iron bridge of 1823. Having walked across it many times before its recent rebuilding and indeed having inspected its underside from a punt, I can declare Pevsner to be right and the OS wrong. A single error might be attributed to carelessness. Let us therefore drift down the river to the railway bridge at 9D.4,5, which the *Map of East Anglia* tells us is of wood. I understand that this was originally of wood but was replaced in 1870 by a plate girder bridge which lasted until 1930. My source⁴ for this bridge is not as authoritative as Pevsner but is entirely plausible: it would have been most remarkable for one of the Great Eastern Railway's wooden bridges to have survived on a main line as late as 1914. And why are none of the other bridges in the centre of Cambridge (eg Silver Street) annotated? One is left in some perplexity as to what might have been the source of the bridge data.

Inclusion of the railway bridge here suggests intelligent drafting (or interpretation) of instructions: a railway bridge would provide a useful means of getting troops across the river if all road bridges had been severed. However, that at 7H.2,1 is ignored; perhaps the Cam above Cambridge was thought too insignificant an obstacle. This does raise the question of what categories of bridge were to be annotated. Logic might suggest those carrying roads over what would otherwise be a significant obstacle; railway-over-road bridges should not be of interest since clearance of debris from the road would be a relatively straightforward job. Such a bridge at 1G.3,1 is indeed not annotated; another at 9D.4,5 is, despite being adjacent to a level crossing. It would be useful to extend this exercise to other sheets of the map.

Continuing with the theme of bridges, the key has a symbol for *culvert*. It

² Roger Hellyer & Richard Oliver, *One-Inch Engraved Maps*, CCS, 2009, 83.

³ Nikolaus Pevsner, *Buildings of England: Cambridgeshire*, 1970.

⁴ http://en.wikipedia.org/wiki/List_of_bridges_in_Cambridge#Railway_Bridge

seems not to have been used, except possibly at Westwick (6B.5,9). Certainly the surveyors showed no desire to mark all culverts. In the context of 1914 it is unclear why the symbol might have been thought useful.⁵

Marking weight limits on bridges seems much more useful than marking carriageway width. So why was the information limited to those unable to carry 7 tons: even if some vehicles (traction engines?) in use weighed precisely 7 tons, there must have been lighter vehicles that might be critical, or indeed scope for heavier ones. Related to this is the question of where the information came from. One finds in the pages of the *London Gazette* of this era notices by County Councils prohibiting the driving of Heavy Motor Cars on certain bridges. If the county surveyors were forming views on the structural strength of road bridges, they presumably maintained a list of those on which weight limits had been imposed. Obtaining a copy of this list would seem a lot easier for the OS than sending its own surveyors to visit bridges to see whether there was a weight limit sign.

Another problem that arises is illustrated by the situation on the road to Royston, where Lord's Bridge (5H.1,1) is marked as unable to carry 7 tons while the alternative route via Comberton seems clear of restrictions: was that merely because the road south from Comberton was too insignificant for anyone to have investigated the strength of its bridges?

Before leaving bridges, we might care to note the Washpit Brook at 6D where two farm tracks (of 12' width) appear to go *under* the brook!

Turning now to gates across roads, this symbol seems superfluous: if a road is unfenced and a fence or hedge crosses it, there will normally be a gate. This may be the logic that causes gates to be shown across a farm track at 4D.9,6: the gates shown are where the track crosses a ditch, so a gate might or might not have been present. But most of the gates shown in 4E do not have this excuse. The information need not have been obtained from survey: the six-inch shows clearly enough whether there is a gate.

Infrastructure

Moving on to telephone/telegraph lines and water mains, Richard Oliver in his notes calls them 'fragile infrastructure'. Doubtless, the cutting of telegraph wires to deny the enemy their use had been a standard tactic in the Boer War, but repair was a fairly quick job.⁶ It seems more likely that the lines are shown for their utility as a means of communication. The existence of telegraph lines along railways seems to be assumed automatically.⁷ Likewise, wires seem to be omitted in built-up areas. An implicit example of this is at Fulbourn (12G) which has a Post & Telephone office (P.t) despite not being shown as connected to a

⁵ The *Text Book of Military Topography, Part I* (HMSO, 1898) p224 states that they should be shown on a Road Reconnaissance sketch, though no description is necessary.

⁶ Lord Haig in his younger days suggested that, rather than *cutting* telegraph lines, it would be more disruptive to randomly reconnect them so that messages went to the wrong destination.

⁷ See Richard Oliver, *Ordnance Survey Maps, a concise guide for historians*, CCS, 2005, 99.

telephone line. While this may be an error, it is possible that the office was connected to Fulbourn railway station along a street that counted as a built-up area. Oddly, a telephone line approaches Fulbourn along the main road from Cambridge but stops a mile short of the village. Has the map caught the line under construction, when the Fulbourn office was just about to be transferred from a railway connection to the Post Office's own lines? Information on the telephone network would doubtless have been obtainable from the GPO.

As for water mains, these are no more vulnerable than anything else on the map. The annotation of reservoirs with their capacity suggests rather that water mains were shown because of their utility, especially for the watering of horses. Since water mains are normally buried, the source of the information was presumably the Cambridge Water Company and other undertakings. Indeed, the water mains ending in the middle of nowhere at 8D.9,2 and 9D.1,1 may indicate the points where the public main ended and was continued by private supply pipes to particular farms.

Churches and viewpoints

Marking churches with towers, etc, is a case of showing information already available in most cases on the one-inch map but not on the six-inch, from which this map was reduced. I assumed that a 'church with tower & spire' meant one with a recessed spire, which counted as a church-with-spire as a landmark but had battlements on top of the tower which could serve as a look-out, whereas a 'church with spire' in this context had a broach spire affording no viewpoint. If that was the intention, it seems not to have been explained to surveyors adequately: Madingley church has a recessed spire but is shown as 'church with spire'. The use of the 'observation & signal station' symbol is also curious. Where attached to a church tower, as at 12E.4,6, it does at least reassure the intending user that the view is not blocked by trees. On open ground the symbol merely provides information that can be deduced from contours. It is possible that the symbol was provided for the convenience of users who lacked adjoining sheets – indeed in this case there was no adjoining sheet to the north. But when so much of the additional information appears to have come from existing records, it is perhaps doubtful that surveyors were sent on an *ad hoc* survey looking for viewpoints. Were the viewpoints taken from an existing list of spots the local Territorials had noted as being useful?

Rivers

Measurements on rivers and streams are erratic, some areas being well-provided, others not. The key seems to imply that a double line indicates streams over 20 feet wide and that annotation is only used on narrower streams. However, standard *small-scale* practice was to use double lines for anything over 15 feet⁸ and 7J.1,9 provides an example of a double-line stream declared to be just 15ft wide, whilst north of it are examples of annotated widths in excess of 20ft. The Cam below Grantchester has more complex annotations such as "25'-1' Water 4",

⁸ *Concise Guide*, 101. The *Text Book of Military Topography* concurs.

whose interpretation is unclear. Is it significant that this section was popular for punting trips? The thought of surveyors punting to Grantchester at public expense is amusing but implausible. The alternative, of clerks at Southampton leafing through guide books to Cambridge for accounts of water conditions, also seems unlikely. On the other hand, one can imagine members of the Cambridge Officers' Training Corps being encouraged to collect this information in the course of leisure trips as well as field exercises; and that might explain the patchy nature of the data.

Camping grounds

Finally let us turn to 'camping grounds'. The requirement was presumably for permanent pasture with good drainage. Most such sites in Cambridgeshire were in the parks of country houses. However, the sites on the map are carefully delineated and sometimes extend outside the park. They appear to represent areas whose use had been negotiated rather than areas identified by surveyors. We know from contemporary newspaper reports that camping grounds were negotiated for territorial battalions for their training periods. So does the map show those sites that happened to have been used thus over the previous few years?

The 12-mile survey

Perhaps the most interesting conclusion from this exercise concerns the source of the data. The question originally posed assumed almost implicitly that it came from OS surveys, either *ad hoc* or routine ones. It has however become apparent that some of the data probably came from statutory operators – notably that on water mains. Other data could have been supplied by the draughtsmen from existing County Series mapping. But the most striking possibility is that some of the data might already have been held by the army.

The germ of this idea is perhaps the Baker Committee's suggestion⁹ that "within a radius of 12 miles of important military stations, the roads should be classified and information as to windmills, public houses, churches, woods, heathy pasture, &c., supplied by properly qualified military Officers, the expense of this being charged to the War Office ... Suitable sites for camping within a 12-mile radius of the military stations should be reported on by the Officers told off to classify the roads". There seems to be a mix of ideas here: on the one hand, the selection of camping grounds would appear to require an infantry or cavalry officer rather than one from the technical corps, and preferably an officer with local knowledge. On the other hand, the statement that expense should be charged to the War Office – unless this refers merely to expenses in inspecting public houses! – suggests that these officers might be on the staff of the Ordnance Survey.

⁹ *Report of a committee on a Military Map of the United Kingdom*, War Office, 1892, pp8, 11. The Committee did also propose a two-inch manoeuvre map with additional contours, for "such parts of the country only as the War Office considers necessary for manoeuvres and instructional purposes", but this was separate from the collection of additional data for the one-inch.

In the event, most of the objectives of this 12-mile survey were incorporated within routine revision. But it seems possible that the other objectives were adopted by certain Territorial and OTC officers, who made a point of collecting such information in the course of other activities and marking it up on their local maps. Do such annotated maps survive anywhere?

One possible piece of evidence for data collection by local units might be variation of features covered from one military district to another. For example, there are no traction-engine watering places on the Cambridge sheet and possibly no culverts. If the occurrence of these features were to be plotted across all sheets and the watering places were found to be almost all within 12 miles of Ipswich and the culverts all around Bury St Edmunds (say), this would strongly suggest local collection.

Generalisation

There is another aspect to this map that I have not touched on, and that is the extent to which superfluous material has been removed from the six-inch to suit the 1:25,000 scale. Parish boundaries have gone. Multiple 'P' and 'W' symbols have been thinned out: presumably it was thought sufficient to know that water was available at a location; there was no need to show the location of every pump. Comparison with the parent six-inch sheets is an instructive exercise, now made so much easier by the availability of the maps on the NLS website.¹⁰ But, as Cambridge textbooks were wont to say, this is left as an exercise for the reader.

A lost letter



CCS member Ann Lloyd of Charlbury, Oxfordshire was surprised to discover that her home town is misspelled on the Ordnance Survey online small-scale map.

¹⁰ <http://maps.nls.uk/os/6inch-england-and-wales/index.html>