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“The Ordnance Survey Drawings of Kent:
sources for the Mudge map and the Old Series”

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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.

***The Ordnance Survey Drawings of Kent:
sources for the Mudge map and the Old Series***

Rob Wheeler

Sometimes it is difficult to prevent a topic from growing. What started as an account of the 6-inch survey of c1789 had to be enlarged to cover the extension made a decade later at the 3-inch scale. It seemed important to make the point that the Mudge/Faden map of 1801 drew on certain sources besides these drawings, and to discuss the revisions marked on them which were made public when the Kent sheets of the Old Series proper were published. And it seemed inappropriate to ignore the drawings of a similar nature covering parts of Sussex and Hampshire, not least because they offered evidence applicable to Kent.

What has been excluded has been the work in the Channel Islands and around Plymouth. Those surveys may well have been important for the development of survey practice, but it is necessary to set a bound, and the stability of survey practice over the period 1789 to 1799 has made this paper a lot more manageable. I have also cut out many of the examples and illustrations that helped to explain my account but which would have made it, with the new extensions, excessively long.

The Kent survey of c1789

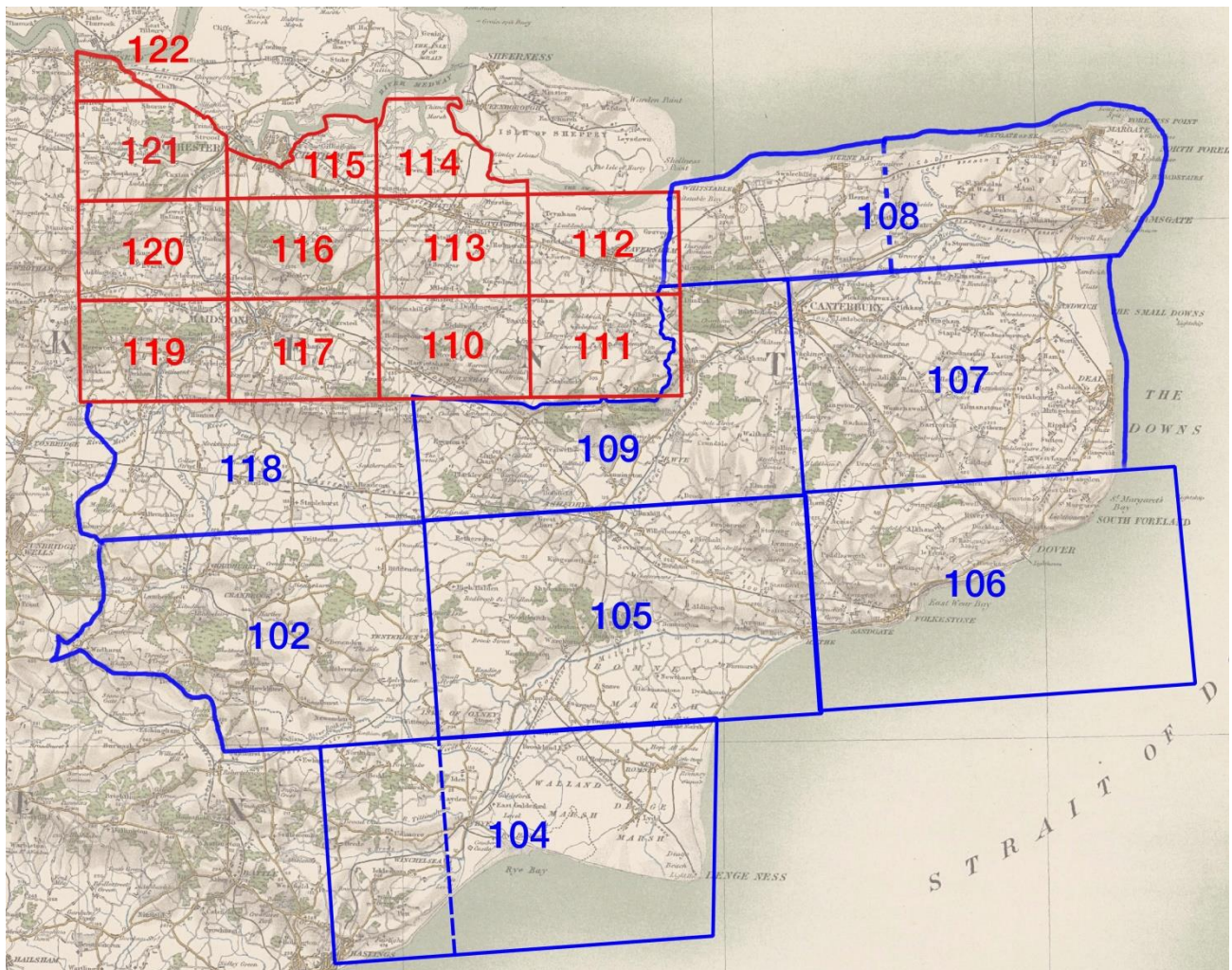
The appointment in 1787 of William Gardner as Chief Surveying Draughtsman is commonly reckoned as marking the start of the Board of Ordnance's dedicated survey organisation. Their first surveys were in the Channel Islands; the Kent 6-inch survey - actually started 1788 - was their first work on the mainland. It also happens to be the first survey that can be studied online.

The area to be covered had already been laid down by the Duke of Richmond as Master-General in July 1785: east of Gravesend and north of Maidstone.¹ The Duke wanted 'surveys of the coast, with landing places and depths of water'. Quite a mix of expertise would be required for this: hydrographic survey to establish how close to the shore a ship might be brought; more practical experience for whether a shore was suited for disembarking troops and stores; and conventional topographic survey to map the area inland. There were political aspects too: the garrison commander at Chatham would no doubt have considered defence of the naval base against an amphibious raid to be his responsibility and for the Board of Ordnance to send a party out under a mere civilian draughtsman would have been tactless.

Richard Oliver has noted that the newspaper that became *The Times* reported in December 1785 that a party of Artillery and Engineers were at work in Kent. The Engineers at this date were all officers, so the gunners

¹*The First Ordnance Survey Map*, pp10-11. See also WA Seymour, *A History of the Ordnance Survey*, 1980, 45-46.

would be providing support functions. Richard also suggested that this survey explains the missing area of Ordnance Surveyors Drawings (OSDs) of Chatham and of Sheppey. This seems highly plausible: the party mentioned in the newspaper report would have completed the difficult part and may have extended their work to end at main roads (the A226 and A2 in modern terms). That would provide a boundary at which the Surveying Draughtsmen, whose formation was already contemplated, could take over; south of those roads the task was within their competence and they would not be treading on any toes. Those two roads do more or less mark the northern limit of the 1789 survey in the Rochester/Chatham area.



*Index map - the 6-inch and 3-inch fair drawings of Kent
(Fraser Donachie)*

The Medway formed the main obstacle for an army advancing on London from the eastern part of Kent. The Duke's specification seems to have envisaged a map of the Medway itself, north of Maidstone, and of the marshes east of Gravesend, in case an invader (presumably the French) tried to circumvent the obstacle by landing west of it. Now the Duke may have done a tremendous job of running a major department of state but he lacked experience of commanding a field army. An officer with more

experience probably pointed out prior to 1788, first, that a defender must not rely solely on an obstacle but must do his best to disrupt the enemy force before it reaches it; and, secondly, that landing a large force in marshland was a really bad idea - they ended up on islands of dry land, connected at best by flimsy bridges which could be destroyed, or could be held by quite weak militia forces. The enemy's best options were to land in the eastern part of Kent, and advance along the line of the main road, with the intention either of forcing a passage at Rochester, or of diverting via Maidstone, or of constructing a pontoon bridge, or even of attempting one of the minor bridges south of Aylesford.

Hence the commander of the defending force needed a map of an area extending well east of the Medway. In the event, the survey extended beyond Faversham. Fortunately the Duke had not specified how far east of Gravesend he wanted the survey to extend, so it was possible to produce a map which met the needs of the field army while still adhering to his instructions. These are the red sheets on the index map on the previous page.

The Survey Process

The process by which the maps were made draws on evidence from both the 6-inch survey and from the 3-inch survey which extended it. I described this in some detail in an online talk two years ago,² so will limit myself here to a summary.

a. A local triangulation fixed a network of points that included temporary pickets, as well as church towers and windmills. At least two points from the higher-order trigonometrical survey must have been supplied within the area allocated to each surveyor along with the distance between them, in order to provide scale.

b. Traverses were run along the public roads. They were plotted on what were termed the *Original Protractions* or *Original Plans* (which I shall abbreviate to *OPs*): one can often see the dots marking stations of the traverse and sometimes even the straight lines joining them. From the surveyor's notebooks the positions of the fences forming the edge of the road were drawn, along with stubs where fences between fields met the road. Buildings adjoining the road or very close to it were also added. *Figure 1* shows such a traverse run from a trig at Cowfold

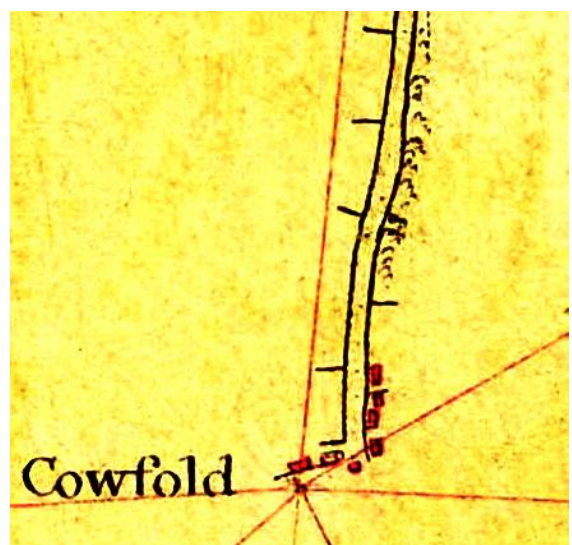


Figure 1

² <https://www.youtube.com/watch?v=y1WGlg5h0K4>

church northwards along the turnpike road.³

c. Tracings were made of sections within the OP. They served many of the functions of the later Field Examination - notably recording land use - but the main task was to insert field boundaries in the areas between the roads. Surveyors had no right of access onto private land, so some of this detail may have been sketched from public roads, but the use of survey-area boundaries that simply run across fields suggest that much of this detail was at least paced.⁴

d. The detail from these traces was copied onto the OP. This is before the days of division of labour under Colby: the surveyor responsible for the OP also took his traces out into the field, and some of his symbols may be quite subtle in order to avoid cluttering the trace for hill-drawing.

e. The finished OP was delivered for fair drawing. It may well have been subject to examination by Gardner to ensure it was a good depiction of the area (albeit without relief).

f. The surveyor took the traces out again to add the hills. (*Figure 2*) In the early period they were carefully pasted to a backing sheet with accurate registration. There is some evidence for hill-drawing after joining; how much is difficult to determine.

g. Hills were added to the fair drawing.

The Duke's instructions specified a piece-work bonus of 2d per acre to teams ordered out on surveys "for surveying and drawing two fair and finished plans on a scale of six inches to a mile, in the same manner as those done by William Gardner of

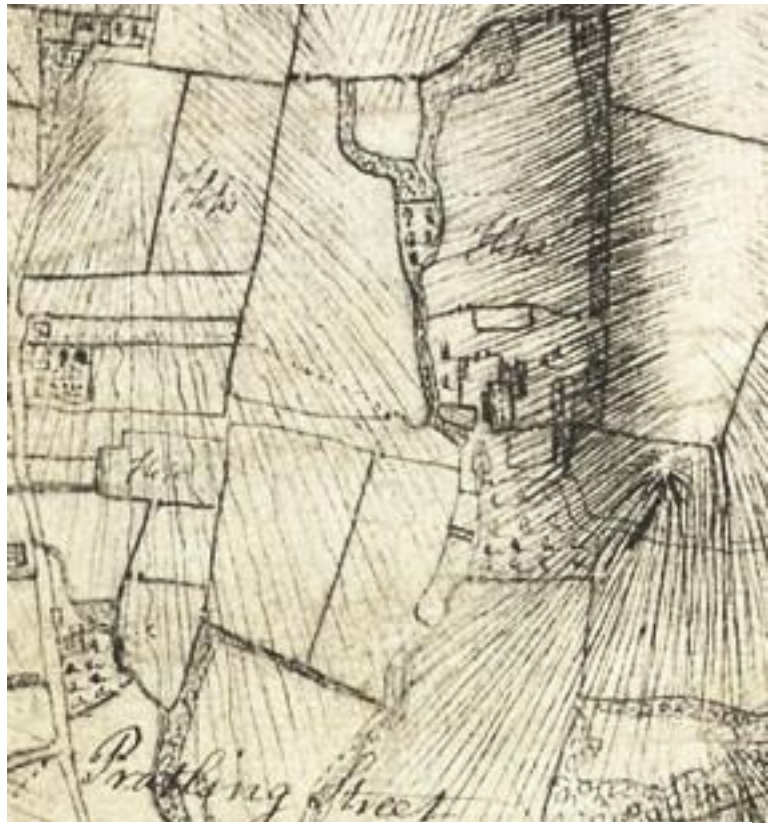


Figure 2 serial 444: hops at Pratling Street (ser 444). Note paths and gateways.

³ TNA MPH1/594/5. For whole document see <https://raremaps.s3.eu-west-2.amazonaws.com/MPH1-594-5.htm>

⁴ Roy refers to making frequent cuts in different directions through inclosures, noting the direction of fences where they intersect these cuts. [Margary volume I p xxx]. Where edges of survey areas simply run through fields, there are often a lot of lines joining trigs. The 'frequent cuts' seem unlikely to be chain lines, which would be unacceptable except after harvest; trig alignments may have been used as a substitute.

the environs of Plymouth”.⁵

This makes it clear that the fair-drawn map was the ‘deliverable’ and it was expected to be produced as part of the detachment and not as a subsequent activity back at the Tower.

From this process, three documents survive.

1. OPs, recognisable by having dots along roads. (See eg *Figure 5a*)
2. Traces pasted on a backing sheet. All the 6-inch ones I am aware of have hill-sketching as well. Whilst they are unpleasing in appearance, their depiction of the hills is clearer than the smoothed out style of the fair drawings.
3. The rectangular fair drawings, which are outstanding examples of cartographic drawing (eg *Figure 5c*).

The fair drawings were given OSD numbers, probably in the 1820s.⁶ It was assumed that the country was partitioned into non-overlapping survey areas, each corresponding to an OSD. Supporting material related to each OSD was ordered to be kept, but in general has not survived. However, because the supporting material for the 6-inch fair drawings often extended outside the area of any single OSD, there may have been concern that they might contain areas not otherwise recorded, so the clerk doing the sorting gave them ‘pseudo-OSD’ numbers, eg 107 (*pt 1*) or 107/109. The collection was given ‘serial numbers’ in 1947, with each document bearing a unique serial. These serial numbers will be used here for categories (1) and (2).

Depiction of Detail

Categories of land use shown are arable, pasture, wood and orchard, the last being shown by trees in neat rows. There must have been doubt when hops were first encountered about how to treat them. One trace (*Figure 2*) has ‘hops’ written where they were found. A couple of OPs (eg serial 436) perhaps show them: *Figure 3* has little obelisks that may represent the trellises the hops climbed up. But the decision seems to have been made that they were a form of orchard. From a military viewpoint - the cover they offered and their impediment to movement - that was probably a fair decision.

On the traces, arable is simply left blank; often too on the 6-inch OPs. Copying errors normally take the form of a failure to copy. Hence there is a certain tendency for other land uses to turn into arable. The draughtsmen concerned, civilians mostly with a background in estate mapping, were probably embarrassed by such lapses; the military customer would have

5 From TNA WO 78/109 of 1.6.1797, quoted in the introduction by JB Harley and Y O ‘Donoghue to the *Margary Old Series*, vol I, p xxvii. By 1797, the 6-inch scale had been superseded by the 3-inch; I suggest that the ‘6 ‘ was copied unthinkingly from an earlier version of the instruction.

6 Y Hodson, *Ordnance Surveyors ‘Drawings, 1789-c1840*,

been more interested in the general character of the ground and unconcerned if the odd field was wrong.

Buildings of masonry are drawn in red, those of wood in dark grey, following the normal military convention. What about enclosure walls? Those associated with country houses seem usually to have been shown in red. Walls and small enclosures adjoining a road could easily have been noted on the record of the road-traverse - and there is perhaps a greater concentration of red walls next to roads. Anything away from the road was simply drawn on the trace. I have not seen any special annotation that might indicate a wall rather than a hedge. Perhaps in this terrain walls are rare anyway. On the Isle of Wight there are occasional walls away from roads, eg those around Appledurcombe House. These walls were perhaps memorable ones. There are also undoubted walls that remained black, for example the ancient precinct wall of Quarr Abbey. The conclusion seems to be that red fences are certainly walls; black ones can sometimes be.

To add further confusion, on the earlier fair drawings, hedge ornament was added to black fences. It adds no new information: the draughtsman was merely prettifying the map.

Names

The allocation of survey areas to individual surveyors seems initially to have used the A2 - ie the Roman road to Canterbury. A surveyor would be allocated a section of road and instructed to survey a strip perpendicular to it on the south side. No doubt a degree of coordination between adjoining surveyors ensured no gaps were left and excessive overlaps avoided. Such a system perhaps indicates that William Gardner had not been provided with an existing map to do his planning. No doubt the Chatham garrison had such a map, but Chatham seems to have been uncooperative.

One consequence of this arrangement is that on the early OPs, 'up' is NNE. Names are written at right-angles to this. An instruction seems to have gone out that names should be aligned east-west. Serial 444 shows the change occurring: in the northern part names are aligned on the A2, in the southern part east-west. Such complications may have made other surveyors very sparing in the use of names on their OPs. Or perhaps there was a conscious plan that names should be collected at the hill-drawing stage and transferred directly from trace to fair drawing. Certainly we find lots of names written on the traces. Where multiple traces have been applied to a single backing sheet, we often find the same name repeated, in a small cursive script. Spelling on the traces can be at variance with that on the OP, eg *Stalesfield* is everywhere changed to *Stalisfield*.

This is perhaps the point to observe that other content could find its way from hill tracing to fair drawing without appearing on the OP. Teynham Lodge was a villa standing well away from the roads so it was first drawn on the trace (serial 431). *Figures 4a & 4b* show that, along with the OP (serial 433) where a blank space is left for it. Did the surveyor run out of time? Did he pass his OP to the draughtsman doing the fair drawing with a little note:

‘Fill in this gap from the trace’? Judging by the dreadful condition of many of the OPs, which appear to have been folded on lines that align with the fair drawings, not to mention having detail trimmed away once it was no longer needed, it looks as though they were regarded as of no further use once they had been copied - in which case it would hardly be surprising if the surveyors who produced them started to cut corners.



Figure 3 serial 436 with hops (?) W of Stockbury



Figure 4 Teynham Lodge (a) on trace (ser 431) and (b) as a gap on OP (ser 433)



Figure 5 West Cliff: (a - left) on OP, (b - centre) on Mudge map, (c) on fair drawing.

Work elsewhere

The 6-inch survey in Kent resulted in a regular grid of 12 fair drawings that assembled into a rectangle with an irregular northern edge caused by the excluded portion around Chatham and Sheppey, about 280 square miles in

all. No dates are recorded after 1789 though it is possible that work continued into 1790.

In 1791, effort was switched to the Isle of Wight - land area 147 sq miles - covered in 8 6-inch fair drawings. Besides the fair drawings, what may be a mix of OPs and traces survive, some signed off as regards acreage by FG Mulcaster, 1 Oct 1791.⁷

In 1792 work moved to the Bagshot area, perhaps better understood as the heaths extending from Ascot past Aldershot to Farnham.⁸ This was seen as an useful exercise area for troops based in London; but producing an exercise map seems a strange priority in 1792. Was insurrection feared, with revolutionary forces assembling on these heaths before marching on London? Only one product from this survey is known, an unfinished OP covering Farnham.⁹ The scale is 3 miles to the inch, so presumably this whole survey was conducted at the smaller scale that had now been adopted; and it would appear to have been left unfinished.

The next project we know anything of concerned Ashdown Forest, St Leonard's Forest, and sundry commons thereabouts. The reason behind it is uncertain; however, in the event of an invasion on the south coast, it would be necessary to have an area to assemble forces and hold reserves; these extensive commons would be highly suitable and a good map would be useful for working out which units should go where and avoiding conflicting movements. The resulting fair drawings survive as OSDs 94 and 95. OSD 94 is incomplete. The related OPs all survive; it is clear that everything they supplied was included on the fair drawing and the surveyors responsible for individual OPs had already taken steps to extend their areas when the order came to cease work. Two of those OPs bear the date 1794, and this is probably the date of all the OSD 94 work.

OSD 95 overlaps OSD 94 by some three miles. This is most unusual and suggests a difference in date. OSD 95 is also unfinished. In this case the western part lacks hills and names. This might simply indicate the way the draughtsmen worked; or it could indicate that the OPs for the western part were available but not the hill-drawings. The paper dimensions of OSD 95 match the 6-inch Kent drawings; those of OSD 94 match the later Kent 3-inch drawings. This suggests that OSD 95 is the earlier; the date of 1792 appearing in a much later OS catalogue of uncertain reliability seems quite

⁷ TNA MPH 1/776

⁸ Eugene Burden, in *Sheetlines* 46 p17 and 49 p44, describes the one-inch map published by Faden for the Bagshot manoeuvres of August 1792. It raises the possibility of two phases to this survey: the surveyors were ordered in 1792 to survey Bagshot Heath proper, because of these manoeuvres (which were to be commanded by the Duke of Richmond and which attracted huge crowds of spectators). Subsequently the surveyors were ordered to extend the survey as far as Farnham. That makes the dating of the Farnham OP to 1792 less certain; it is even possible that the Bagshot portion was to a different specification.

⁹ TNA MPH 1/594/1 - available at <https://raremaps.s3.eu-west-2.amazonaws.com/MPH1-594-1.htm>

credible. It does - surprisingly - appear that we have two independent surveys for this overlap area, just two years apart.

The whole period 1792-96 is distinctly odd. Just three sheets were being worked on.¹⁰ All were terminated prematurely, OSD 94 being so incomplete as to render it almost useless. I suggest that, under the pressures of war, a revolution was imposed from above, driven by a need for a usable product now rather than a quality map in the distant future. One strand was to grant maximum assistance to the Gardner, Yeakell & Gream map of Sussex, including releasing William Gardner to attend to it. The other strand was the appointment of a Capt Thomas V Reynolds, to make 'flying surveys'¹¹ with (by 1796) an allowance of £1/day, and the transfer of George Pink and Thomas Yeakell,¹² probably the two most capable surveyors after Gardner, to assist him. This must have left a depleted Drawing Office under a slimmed-down management, with limited capacity for conducting surveys. It seems possible that these surveys of heaths and commons were undertaken as training exercises. We know the names of three surveyors involved in the 1794 work that led to OSD 94: one was Yeakell (there primarily as an instructor?); one was commissioned into the Royal Engineers in 1801 (a cadet under training?); the third we know nothing about - he clearly was not one of the long-term Drawing Office men.

Then, seemingly in 1797, normal activity was resumed, albeit at the 3-inch rather than the 6-inch scale. The Hampshire coast appears to have been the top priority, followed by Kent. So does this represent a counter-revolution? It seems quite likely that, in the absence of proper cartographic control, Reynolds 'flying surveys' failed to fit together and this was deemed unacceptable. 'Kent, Sussex, Surrey and part of Hampshire' was the area to have been covered by him. Sussex was now covered by an engraved map; the rest (other than Surrey) were now to be surveyed properly in no more time than Reynolds had taken.

There was one other change in presentation. Hitherto, each fair drawing had been presented on a single sheet of paper. The Hampshire coast (OSD 75) was presented as a roll on multiple sheets pasted together - though the arrangement of the constituent sheets makes it possible that the decision was only made after the area around Portsmouth had been fair-drawn. Reactions may have been mixed because, for Kent, the OSD copies were

10 The Bagshot heaths might be regarded as requiring a sheet and a half, so three *projects* might be more accurate.

11 Margary Vol I, p xxxi.

12 There are a lot of Thomas Yeakells. Thomas senior, who initiated the Sussex map, was dead by 1795. Thomas junior seems to have been active only from 1810; so we seem to have just one person of that name active in this period.

single sheets whilst the second copies were assembled into rolls, each corresponding to a row of OSDs.¹³

From about this time, it appears also that the traces with hill sketches were submitted individually rather than being assembled on a backing sheet by the surveyor. Those that have survived among the OSDs have been assembled subsequently, but by then they were kept merely as a matter of record and little care was taken over alignment. Such traces as were retained by surveyors and subsequently found their way to TNA seem merely to have been kept together in a wrapper of some form.

The 3-inch Survey of Kent

The intention seems to have been that the 3-inch survey would cover the whole county in a regular grid, along with such parts of adjoining counties as were needed to square the map; the earlier 6-inch survey would be reduced and added to the 3-inch sheets.

However, the decision in 1799 that the map should be reduced to the 1-inch scale and engraved - in effect adoption of the Sussex approach - led to a change of policy with regard to the 3-inch. It was still seen as a valuable supplement to the 1-inch (as well as serving as compilation material for it) but there was clearly a determination to cut costs. Thus work in neighbouring counties was halted, though areas already surveyed were to be finished off and fair-drawn. That seems to be the explanation for the convoluted western boundary of OSD 102. Any plans to reduce the 6-inch work to the new scale were dropped, and it was decided that no fair drawings should be produced in the 'suburban' part of Kent lying west of that 6-inch area. Here the OPs were the finished product, with hill traces being sent direct for reduction to the 1-inch scale.¹⁴ These OPs bear dates but the nature of those dates needs to be understood. The reader may recall that surveyors received a bonus of 2d per acre on delivery of two copies of the fair drawing. The fair drawings were rectangular and were more or less a standard size, so calculating the payment was straightforward. But now the deliverable was an OP of irregular outline, so it needed to be 'cast' - ie to have its area measured - and this needed to be verified by an officer. (Evidently getting this fairly modest sum right was seen as just as important as the accuracy of the survey!) So Lt William Twiss, RE, came out to visit the surveyors in December 1798 and again in May 1799, and he duly signed off the area calculation in the margin of each OP. That gives us a date by which work had been completed or partially completed, and it tells us, in effect, that the whole of Kent had been surveyed and drawn by May 1799.

13 OSD 104, the 'bottom row' of Kent, is an exception, two sheets having been joined.

An OP (serial 363) has been trimmed exactly at this join, showing that the two sheets were drawn separately.

14 OSDs 98-100 and 128-130 are the 'finished product' OPs. For that reason they carry the post-1805 amendments which otherwise are limited to the fair drawings.

The Mudge/Faden Map

It is easy to fall into the trap of regarding the 1801 map as an Ordnance product in all but the commercial details. The agreement reached with Faden allowed him to use the Ordnance source material for a map of Kent. However, Faden retained editorial freedom, and he used this to employ other sources where he saw fit.

To dispose of the Chatham/Sheppey area first, we simply do not know to what extent Chatham sources were drawn upon. One clue is provided by coastal marshes. Mapping channels in such marshes was a major problem: access was difficult and there was rarely an elevated point from which they could be sketched. The marshes east of Faversham provide a good example of what the Ordnance surveyors could achieve: comparison with the large-scale survey of the 1860s suggests that they had managed an approximate depiction of channels but with considerable distortion. (Of course it is necessary to form a view on how much evolution might have occurred between the 1790s and the 1860s.) The 1801 map attempts to follow their depiction: we see real topography, even if it is inaccurate. Looking at areas the OSDs do not cover, the 1801 map has plausible topography in the Isle of Grain, and also in the *Salt Marsh* north of Higham. Most of the other marshes - Gravesend Marshes, Cliffe Marshes, Cowling Marshes - have a vague pattern of channels, lightly engraved, that suggests a diagrammatic depiction (rather like the diagrammatic field boundaries on this map) - see *Figure 6a*. And the Isle of Sheppey has no small channels at all, merely large ones - perhaps surveyed by boat. This seems to suggest a mix of sources of varying character.



Figure 6 Marshes E of Gravesend: (a - left) on Mudge, (b) on Old Series sheet 1 (state 1)

The other clue concerns the copying of OSD 112: the name *Magden* is changed to *Nagden* in several places. This is a really obscure name, unlikely to be caught by the general review of major names that took place; and if one of the sources - a chart, perhaps - depicted the channel

bounding OSD 112 to the north, it might well name the marshes that formed the southern edge of that channel.

These clues do not take us far, but do suggest a mix of sources, including perhaps charts. They tend to confirm that there were no 'missing OSDs' that were used.

Next, there are a couple of things that could have come from a wide range of sources. Mileages along main roads appear consistently; on the OSD they are limited to a very few roads. And Faden imposed his own ideas on the spelling of place names down to parish level.

New minor place-names appear in areas where Faden seems to have thought there were too few. They are likely to be taken from other maps that he sold. The area round Hale Street is particularly instructive. The table below gives, for places not originally named on the OSD, the name on Faden's map of *The Country twenty-five miles round London* of 1789 (derived from a mixture of sources but perhaps principally from Andrews, Dury & Herbert, 1769), on Mudge, and as later added to OSD 118. The 1789 map was not copied unthinkingly, but it (or its predecessors, or later editions) do seem to have been the source.

Andrews, Dury & Herbert 1769	25 miles round London 1789	Mudge 1801	OSD118 additions
The Brooks	The Brooks	The Brooks	Brook F
Padlings Pound	Padlings Pond	Padlings Pound	Pound
Betstrim Green	Betstrim Green	Betstrum Green	Beltering Green
Pickfish	Pickfish	Pickfish	Great & Lit Pigfish
Fouling Green	Fouling Green	Fouling Green	Fowl Hill

Faden also had definite views on rivers: he liked them to look like rivers (in their windings) and to be flanked by marshes. In this area, a lot of the rivers had been straightened to improve drainage and are shown thus on the OSD. Faden instead substitutes a pattern of rivers from an unknown source but perhaps drawing heavily on Andrews, Dury & Herbert; he also shows marshland (or water-meadows - the symbol is not explained) along the bottoms of the valleys. This does not fit the OSD categories of land use, and there are instances where the OSD shows a field as arable which Faden shows as marsh / meadow. One is inclined to suspect that the marsh / meadow was pure invention.

More interesting still are new turnpike roads. In the 6-inch area there are just two, despite a decade having elapsed since the OSDs were produced. The more interesting one is a brand-new road from Wrotham Heath to a junction near Mereworth. The southern part follows a line which is plausible but wrong. It is possible that Faden's line comes from the deposited plans and that the line was changed to meet the objections of the

proprietor of Yokes Place, whose park would be cut by the line shown. The other, a new line for the Rochester-Maidstone road, is not quite as executed. Both turnpikes have also been added to the OSDs; in both cases the line on the OSD corresponds to what was built. It will be argued below that the alterations on the OSDs were drawn after 1800.

The final source to be mentioned is Earl Darnley. He had brought in Repton to remodel his park at Cobham Hall, south of Gravesend, and he evidently wanted the changes shown. How he knew that a map of Kent was being engraved, we do not know: perhaps Faden's agents had been soliciting advance subscriptions. Further evidence linked to Lord Darnley is a marine villa at Ramsgate purchased by him in 1801.¹⁵ It had originally been built about 1795 and was then called *Belmont*. Darnley renamed it *West Cliff*. *Figure 5a* shows it as surveyed about 1798: an unnamed house in a small enclosure adjoining the road. *Figure 5b* shows it on the Mudge/Faden map, with its new name and a park extending right to the cliff. One can just make out the back wall of the original enclosure. What was now a wall within the grounds would not normally have been engraved; the implication is that the villa had originally been engraved as on the OP and the park had been extended subsequently (but before publication - this is State 1). The Mudge map also adds a circular structure NE of the house.¹⁶ *Figure 5c* shows the fair drawing with amendments that will be discussed later.

Revision to Fair Drawings

The northernmost portion of the Mudge map was superseded in 1805 by Part I (Essex) of the Old Series. I have not noticed any changes implying revision on the ground, but there was a form of revision in the office. Looking at the marshes east of Gravesend (*Figure 6*) the minor channels which I suggested above were diagrammatic in nature seem to have been understood that way by the revisers so were not copied to the new map. The revisers also spotted that the hachures from Northward Hill extended into the marsh - they are scarcely visible on the printed version of Mudge but there were perhaps MS models they could consult, so the boundary of the marsh was altered. The new boundary has little undulations like a mountain stream, despite crossing a real stream at right angles; these undulations are obviously an invention.

The Gravesend marshes were an area where there were no OSDs. If we look at Dartford, where an OP (OSD 129) had provided the main source for the Mudge/Faden map, we find that Sheet 1 adheres more closely to the OSD, omitting a couple of unfenced 'roads' where Faden had misinterpreted

¹⁵ My account of this villa is based on the entry in the statutory list.

¹⁶ <https://www.kent-opc.org/Parishes/pics/manors/Thanet-WestCliff1808.jpg> is an 1808 engraving showing extensive additions. Whether the circular structure on the map represents the additions on the left of this elevation is left for the reader to puzzle over.

banks as roads, as well as tweaking the extent of marshes. Once again there is no sign of any revision on the ground.

The next portion of Kent to be re-published lay south and east of Tenterden. This lay within Old Series sheet 5, published in 1813. However, if we are looking for evidence for the start of a programme of revision, we need to look at sheet 11 in Hampshire, with a publication date of 1810, which incorporates numerous updates compared to the original form of OSD 75. Unfortunately, both these dates are unreliable: we cannot point to a specimen of either sheet that was definitely in existence before 1816.¹⁷ Developments at Maidstone point to a much earlier date for amendments. Here, there was a re-alignment of the turnpike road from Ashford which facilitated the enlargement of the park of The Mote and which can be dated from Highway Closure orders in the Quarter Sessions records to 1794. The house was rebuilt on a new site close to the edge of that first park extension. The accepted date for its completion is 1801. The associated landscaping involved an artificial lake which required a second extension of the park and a further move of the turnpike road. The date for this is not known, but seems likely to be not long after the completion of the house. OSD 117, the fair drawing covering this area, has been marked up with the first set of changes; it has subsequently been marked up with the second set of changes involving the cancelling of parts of the first set. This shows that changes were surveyed at some date after 1794 and before the second set of changes had been made; this would appear to have happened not long after 1801.

It is easy to slip into the error of regarding these alterations to the OSDs as indicating their use as revision documents. All the fair drawings are on large sheets of paper; the 6-inch fair drawings have never been folded and clearly have never been used in the field. Furthermore, the depiction of changes (particularly deletions) is often inadequate to show the engraver what needs to be changed. The most appropriate document to use in the field for recording changes would be a copy of the relevant sheet of the Mudge/Faden map. That could also serve as the revision model indicating to the engraver what changes he should make. What we see on the OSDs is a copying of updates onto what was still the finest map of the area that the country possessed. Those updates often seem crudely drawn but it must be remembered they had been surveyed and drawn for use at the 1-inch scale. Thus what we see is an echo of the revision programme; and we ought not to be surprised if there was occasional failure to copy things back that should have been copied.

Updates fall into various categories. First (it would seem) came a requirement for more place-names. This seems to have been done systematically. It is as though someone looked through a copy of Mudge and ringed in pencil those hamlets and isolated farms that ought to have

¹⁷ One might argue that the unfinished state of Sheet 10 in the Everard atlas at CUL is earlier, but by how much is uncertain.

names. A surveyor was then sent round to collect names. No doubt there were instances where it was not possible - farms that were simply known by the name of the current tenant, for example - but a large number of names were collected, extending into the obscurest corners of the district. A draughtsman then added them to the fair drawing. In some cases it may even have been the man who did the lettering on the original; at any rate it was someone who could write in the same hand. Often the ink used is noticeably blacker, but in many cases it is indistinguishable and the most reliable test is to compare the fair drawing against Mudge.

A second category concerned new turnpike roads, either wholly new or straightening of existing roads. These must have been surveyed on the ground, along with the associated changes to local roads. The case of Maidstone shows that surveys took place at multiple dates. The road west from Ramsgate in *Figures 5 a & c* provides a good example of one of the more modest improvements.

A third category is the addition of new buildings in black ink. The fair drawing originally used carmine for buildings of brick or stone, dark grey for wood - a standard military convention. But the amendments were surveyed with an engraved map in mind so no such distinction was needed. Sometimes the buildings mass into streets, for example in the northern suburb of Maidstone, where the new Gaol is also added. But sometimes new buildings are *not* added to the OSD: for example the extension of Tunbridge Wells along the London road shown on State 1 of Sheet 6 does not appear on OSD 101.



Figure 7 Star Inn. Deletions marked with 'X'. Note new buildings in black

Deletions are a fourth category. As an example, *Figure 7*, just east of Chatham Hill, is instructive. A couple of tongues of woods snaking up to Watling Street east of the Star Inn are marked with an 'X'. Careful inspection shows further 'X' symbols in the woods to the west. But these

would not have been adequate as an instruction to the engraver; they are really only an indication to the user of the fair drawing that changes have occurred and he should consult the printed map to learn their exact extent.

Finally we have inclosure of open fields and commons. *Figure 8* shows Fawley Common (Hants) (a) from the second copy of the fair drawing, now on our website, and (b) as altered on the OSD. A certain amount of erasure has been supplemented by the heavy drawing of the new detail on top of the partly-visible old detail. This includes diagrammatic field boundaries. Fawley is unusual; Ramsgate St Lawrence (*Figure 5c*) is more typical. The only fences added at Ramsgate are those that are to be drawn on the 1-inch. Thus the fences around West Cliff are added because they will be shown as park. But the new land use does not appear on the OSD: one is expected to guess or to consult the printed map.



Figure 8 Fawley Common: (a - left) as originally drawn, (b) on OSD 75

One should perhaps mention also the addition of spot heights in red. They seem likely to have been measured by theodolite rather than levelling. They were not transferred to the Old Series, so may be of the 1820s or later.

It has already been noted that the westernmost part of Kent lacked fair drawings, the OPs being used as the input to the Mudge/Faden map. Those OPs continued to be treated as substitutes for fair drawings and had revision information copied back onto them just like the fair drawings.

Later history

Up to this point, we have a clear purpose and consistent implementation. Revision has been undertaken so that Old Series sheets will be reasonably up-to-date at publication; and the output from that revision is copied back onto the OSDs. Draughtsmanship is much the same regardless of which OSD we look at.

There is one small exception: the very limited revision undertaken for Sheet 10 is not copied to the OSDs.¹⁸ Perhaps this can be explained as a newly-introduced system settling down, a bit like the Fawley inclosure.

What happens after Old Series publication is more disorganised. On OSD 117, on the road south from Maidstone, *Sharling Pond* is corrected to *Sharnal Pond*. The change is presumed to be late because it does not appear on the Old Series sheet 6 and because the change is made in a cursive hand: such amendments do generally seem to be late. South of the Pond, a curvaceous drive to Loose Court had already been added, as seen on Sh 6. This was subsequently deleted and replaced by a more rectilinear course. The change is a plausible one: the drive had run diagonally across fields which, when the OSD was first drawn, were arable. Following the collapse of agricultural prices at the end of the Napoleonic wars, the proprietor perhaps needed to maximise his rent, which meant offering fields unimpeded by a carriage drive; hence the drive was moved to run through woods and along field boundaries. But why was it thought appropriate to revise the map? The late changes in Kent do seem to be concentrated on the main roads to London. So possibly a surveyor, travelling from the Tower for some other purpose, spotted the change; and there may have been an expectation in some quarters that a form of continuous revision would be adopted.

What we see in the Isle of Wight is entirely different. At Newport, two churches have been added, St John (1837) and St Paul (1844) with dedications noted in a tiny cursive script.¹⁹ From Carisbrook Castle faint pencil rays are drawn to these and to a ?picket marked 'Ch ' on a hillside to the north. These pencil lines cannot be regarded as updates. They seem rather to be the results of a surveyor practising his skills. There are several other pencil additions of this nature on the IOW drawings, including a new field boundary.²⁰ The Survey had decided in 1799 that it was unnecessary to map exact field boundaries. But here there is no attempt to depict the new field pattern in general: superseded boundaries are not marked for deletion. It has the character of a surveying exercise.

OSD 75 also bears pencil annotations, including the sheet lines of 6-inch plans from the large-scale survey of the 1850s and 1860s. This is not as perverse as it might seem. Until those plans were issued, OSD 75 was the best map of the area the Board of Ordnance possessed. Thereafter, for the area it covered, the new survey was better. So it was entirely logical to

18 Fraser Donachie, "Old Series Sheet 10", *Sheetlines*, 134, 12. Fraser has drawn my attention to changes to salterns that *were* copied to sheet 10; perhaps these are very early amendments.

19 I am grateful to Frank & Vicky Basford for drawing these to my attention.

20 Bowcomb Farm is shown on OSD 70, SW of Carisbrook Castle. A line of fences runs SE from the farm and this is continued by a pencil line until it meets the road. The large-scale survey of the 1860s shows that this corresponds to a altered field boundary.

mark on the OSD those areas where it not to be used because a better map was available.

There is an accepted view of the subsequent history of these documents. A circular of August 1820 directed that surveyors should send their supporting material to the Tower. The implication is that the 'deliverables' were already there, perhaps in rolled bundles of eight or more.²¹ The assignment of OSD numbers followed soon after, and thereafter they were (presumably) kept secure until they eventually found their way to the British Library. The Isle of Wight drawings seem to contradict this. Whilst the positions of two new churches might plausibly have been communicated to HQ for inclusion, their dedications and the rays from Carisbrook add nothing of interest. It appears rather that OSD 70 - and probably *all* the IOW OSDs - were held locally on the Island.

What about Kent? OSD 108 has quite an array of pencil rays with offsets drawn from them. *Figure 9* shows an offset being run from within Thornden Wood - by the final 'o' of the name - to Thompson Farm. This being a wood, there can have been no line of sight. The ray through the wood must have been chained, and the offset too. As a way of surveying detail it is utterly inefficient. It seems rather to be an exercise, and a rather tedious one. Further east on that OSD, there is a pencilled '1' on the road to Pegwell, a '2' at Cliff End, a '4' at Halfway House, a '5' at Seven Score. All but one of these are where a fence meets a road; at '2' it is a fence corner a few yards from the road. This again seems to be an exercise. So it looks as though the Kent drawings too were held locally, though perhaps not the 6-inch ones, which seem to be in better condition.

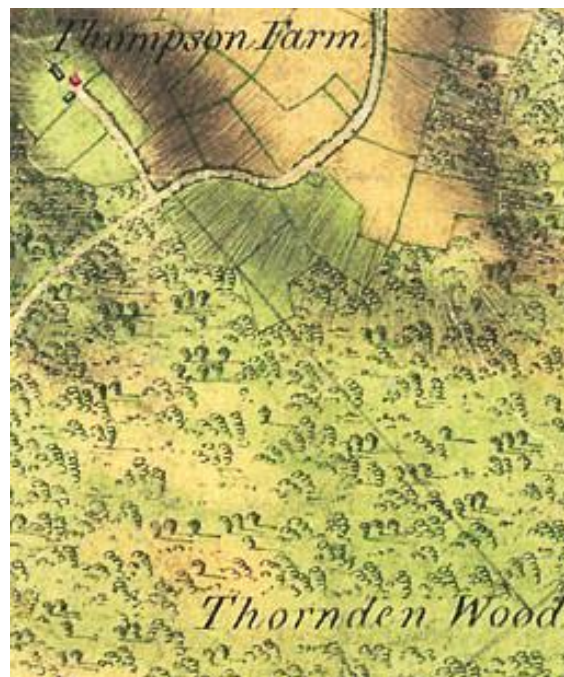


Figure 9 Offset on OSD 108

²¹ Y Hodson, *Ordnance Surveyors' Drawings 1789-c1840*, 1989, pp22, 23.

The subsequent career of the second copies has not been much discussed. It would seem logical for them to be held where they might be accessible to a commander of a field army - at Horse Guards, for example. It would seem foolish to hold them with the OSDs. OSD 105 casts doubt on this comfortable assumption. Additions include the camp established on Brabourn Lees, along with a number of minor place names, all of which appear on the Old Series. But it continues to show Hurst in the 'parish village' font, whereas the decision seems to have been taken that in view of the total decay of the church and the tiny population the name should be changed to Hurst Farm in italic, and that is how it was shown on the Old Series. This change was not recorded on OSD 105, but it was recorded (unlike all the others) on the second copy of the fair drawing, now TNA MR 1/600. The obvious explanation is that the draughtsman charged with making the alteration picked out the wrong copy - the implication being that the two copies *were* held in the same place.

The underlying explanation may be that no one actually had much interest in these second copies. It seems just possible that their existence may have something to do with the 2d per acre paid to the surveyors. It all depends on the arrangements that existed before the Duke of Richmond's instructions of 1795. There appear to be no second copies of the 6-inch drawings, and I suggest that in that era 2d per acre was paid on delivery of a single fair-drawn map. When the 3-inch scale was adopted, there was less work for the draughtsman (and, to some extent less work all round) and the Treasury was liable to balk at paying the same sum for less work; but sorting out how much less a sum ought to be paid - 1¾d per acre? - held out the prospect of some disagreeable altercations with the surveyors. So requiring two copies of a 3-inch map instead of a single 6-inch map while retaining the twopenny rate might be thought sufficient to keep both the Treasury and the surveyors happy. But this is of course just speculation.

Practical conclusions

What are the points from this that need to be remembered by the map-user who, almost without exception, will be interested in what these maps can tell him about a single property? For many purposes it will be sufficient to look at what might be termed the 'main OSD': the fair drawing over most of Kent or the OP when close to London. But if he has any doubt about the correctness of what is shown, or if he needs to know the number and relative positions of the buildings making up a farm (for example), he should consult all the material that covers his site; and he may be fortunate enough to find that fair drawing, OP and trace all exist. Indeed, on exceptional occasions he may find his site is on the overlap of two OPs.

If the site adjoins a public highway, it should have been recorded in the course of a road traverse, so the OP will be closest to the original sketch in the (vanished) surveyor's notebook. If it is away from a highway, the trace will be the original depiction, though its interpretation when being copied to

the OP may have drawn on the surveyor's recollection. And occasionally information did find its way to the fair drawing by non-standard routes.

In interpreting the fair drawing, it is necessary to distinguish the original drawing from later amendments. In the case of changes to roads, the coarse drawing of the amendment leaves no doubt. New buildings and names present greater problems. Sometimes the blackness of the ink makes new buildings stand out; and of course if a building known to be of masonry is shown in black ink it must be an addition. Otherwise (and particularly for names) he should consult the second copy in the case of 3-inch drawings. For 6-inch drawings he should compare against the Mudge/Faden map, bearing in mind that, just occasionally, Faden decided there was insufficient space to use a name.

Appendix: References of Second Copies

The table below lists the OSDs that formed the main source for the Mudge/Faden map, along with the TNA references of the second copies (where they exist).

OSD	Second Copy
98-100, 128-130	None: OPs with no fair drawings
104	MR 1/598
102, 105, 106	MR 1/600
107, 109, 118	MR 1/599
108	MR 1/597
110-117, 119-122	None: 6-inch drawings

The districts outside Kent have not been included, but for the Hampshire coast (OSD 75) a scan of the second copy is available on the Rare Maps section of the Society's website.