

Sheetlines

The Journal of
THE CHARLES CLOSE SOCIETY
for the Study of Ordnance Survey Maps

Number 123

April 2022



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When sorrows come, they come not single spies, but in battalions. The news of the death of the first Chairman of the Charles Close Society, Peter K Clark, would have been sorrow enough; but we also have to record the passing of two further stalwarts of the Society – Tony Meatyard, the Society’s first Honorary Auditor; and Professor Paul Bishop, a distinguished contributor to *Sheetlines* (his final article, signed-off only shortly before his untimely death, appears on pages 7-25 of this edition).

All three members leave significant and lasting memorials, either in the sense of helping the Society to flourish, or of adding to the store of knowledge and expertise – or both. And in the case of Peter Clark, that legacy takes a tangible form. Not long before his death, Peter made a munificent gift to the Society to be managed by the Society’s trustees as a restricted fund. One of the purposes he had in mind was the writing of a history of the Map Research Officer class within the Ministry of Defence and its predecessor organisations, something that is closely intertwined with the history of the Ordnance Survey itself. He had a specific author in mind, who is willing to tackle it, but there is considerable doubt about whether the Ministry will be willing to release certain documents that are critical to this work.

A second aspiration was to increase the range of County Series maps available on-line, and particularly the First Editions of the 1:2500. As it happens, a project of this nature - indeed of rather greater scope - is in hand already. It may be that the trustees will take the view that Peter’s aspirations have been wholly satisfied; or it may be that they will feel there are gaps that can usefully be filled. This will not be clear until the project currently under way is completed.

A third aspiration was to assist original research into the Ordnance Survey and associated mapping through the establishment of a Peter K Clark Award to assist with research expenses. The trustees will need to draw up rules and procedures for this, and these will be promulgated in due course.

With interest rates at their current levels, a fund that is restricted to paying out income can achieve very little and it was therefore understood that this fund would be able to run down its capital; the trustees envisage this happening over the course of a decade or decades.

In the following pages, tribute is paid to the contributions made to the Society by Peter Clark, Tony Meatyard, and Paul Bishop.

Peter Kenneth Clark : 26 January 1926 - 9 December 2021



Yo Hodson writes: Peter was co-founder and founding chairman of the Charles Close Society. He was fifty-four when the Society was founded and, by that time, he had been deeply interested in, and had studied, Ordnance Survey maps for at least forty-six years.

It all began when his mother, Elsie (a teacher), took him on a bus trip when he was eight years old. She had brought with her an Ordnance Survey map so that he could see how the view from the bus compared with its representation on the map. This was the beginning of a lifelong interest in maps and geography.

Four years later, now aged twelve and a pupil at Latymer Upper School, Peter came top of his class in his first year and chose as his prize Kenneth Earle's book *The Geological Map*, an unusual and perhaps precocious choice for one so young.

By the age of sixteen, Peter was writing to his schoolfriend, Ian Mumford, demonstrating an advanced and sophisticated appreciation of cartography. He writes 'About your Ilkley Tourist; closer examination proves it to be even more interesting than you think. What you took to be two colour hachures is in fact one colour hachures & oblique hill shade in purple; in other words this map is one of the great special Killarney type; it is in fact the same as that far famed sheet with regard to construction ...'. His letters are full of detailed discussions on aspects of OS cartography, of his map and book-buying exploits – funded by money earned by firewatching in the evenings during the war. I was to benefit from all of this experience when, just twenty-five years later, Peter and Ian took me on map and book-buying expeditions on a few Saturday mornings in south London.

From school, Peter joined the Royal Navy in 1944 and was sent to Liverpool University to do a Short Course in Oceanography, Geography and Geology. His National Service was carried out with the Meteorological Office between 1945 and 1947, followed by three years at St John's College, Cambridge, reading Geography and studying Polish - and taking notes on the rare OS one-inch maps in the library. Here he was a founder member of the Purchas Society, serving as its Secretary and President, sitting on the committee with CIM O'Brien (a former editor of *Sheetlines*). Peter's application to join the staff of the British Museum Map Room in 1950 came to nothing, but at the same time he had applied for the job of Assistant Map Curator in the Ministry of Defence. Here, not only because of his now profound knowledge of maps but also because of his linguistic capabilities (he spoke fluent Polish and became at ease with most East European languages), he was welcomed with open arms and joined in December 1950.

Thirteen years later, in January 1964, he was appointed head of what was now the Map Research Officer Class. As Chief Map Research Officer he was in charge of the principal government map library in the UK and provided the cartographic research support for the production programmes to meet the needs of the Army and Royal Air Force for maps and aeronautical charts. Peter was acknowledged as a world expert on European and British Empire surveys and mapping – knowledge which played a vital defence role in the days before satellites became commonplace.

Peter retired from the MOD in 1983 and, in that same year, became Keeper of the Royal Geographical Society's collections of maps, books and archives. He sat on the Permanent Committee on Geographical Names for British Official Use, serving as Chairman. He also sat on numerous other committees, including a British Library Advisory Committee. When he retired from the RGS in 1991, Peter was given the Society's Murchison Award for services to cartography. He continued to work as a cartographic consultant, specialising in international boundaries, source material research, place-names and map collection management and automation.


Peter was in 1963 a Founder Member of the British Cartographic Society, serving on its council from 1975 to 1984; in 2006 he was awarded The Society Medal for 'Distinguished Service to Cartography'. He was for fifteen years Deputy Editor of *Imago Mundi*. Peter had a profound influence not just on the military cartographic community but also on those who managed the nation's map collections at the National Archives, Bodleian at Oxford, Cambridge University Library and the National Libraries of Scotland and Wales.

In 1980, when the CCS was founded, Peter was instrumental in persuading Helen Wallis, then Deputy Keeper of the Map Library of the British Library (still, then, housed in the old British Museum building) to allow the newly founded society to use the BLML as its official address which it retains to this day. In his capacity as Keeper of the RGS, Peter was able to arrange for the society's celebration of its tenth anniversary to be held at Lowther Lodge and, a year later, for the Society's exhibition on the bicentenary of the OS to be staged there. Together with his partner, Merle Abbott (who predeceased him in 2020) – Map

Curator in the Geography Department of Birkbeck College, London – he sought and received permission for the Society's annual general meetings and map markets to be held at Birkbeck, occasions which many of the longer-standing members of the Society will remember well.

Peter was a discerning collector of OS maps throughout his life, with a special interest in Mudge's map of Kent and the Old Series one-inch maps. He was generous in sharing his knowledge – Brian Harley benefited greatly from Peter's expertise when compiling the notes for the David & Charles series of one-inch reproductions (he taught Brian how to pay attention to detail when looking at maps), as did I when writing the introductory essays and producing the cartobibliographies with Brian for the first three volumes of the Harry Margary facsimiles.

The Society has also benefited, throughout its forty-one years, from Peter's deep love and knowledge of Ordnance Survey maps and through his final gift, a generous bequest to support research into the subject.



SHEETLINES

The Newsletter of
THE CHARLES CLOSE SOCIETY

No. 7
October 1983

MAPS FOR THE ARMY : THE ORDNANCE SURVEY'S CONTRIBUTION

There is a clear distinction between Ordnance Survey maps and Ministry of Defence/War Office maps. Towards the end of the Crimean War, three distinct streams of military mapping were united in the Topographical and Statistical Department, under Col Sir Henry James. These three were: the O.S.; the Royal Engineer mappers overseas; and the Quarter-Master General's office. It was intended to incorporate the surveying activities of the Inspectorate-General of Fortifications (IGF), but in the event this did not come about. From its formation in 1857 until 1870, the Topographical & Statistical Dept. was based in London, and was mostly concerned with overseas mapping: the O.S., of course, at Southampton. By 1870 a split was due: the O.S. had substantially completed its initial task of producing a 1" military map, and was mainly progressing civil largescale work, and so it was removed from the War Office and placed under the Board of Works, though retaining close links with the Topographical Dept. which carried on under the War Office. Thereafter the division of work between the Topo. Dept. and O.S. was principally on the basis on the size and complexity of individual tasks: Southampton drew and litho printed maps of all parts of the world.

Opening paragraph of Peter's speech to the CCS meeting in Sheffield, 18 June 1983, reproduced in Sheetlines 7.

Tony Meatyard (1939-2021)

Nick Krebs writes: Tony, the Society's first Honorary Auditor, was born George Anthony Meatyard on 1 August 1939. Growing up in Liverpool, he attended boarding school in Malvern, and on returning home applied successfully for a trainee accountant post at Cunard. Tony's astute mind and keen eye for detail soon saw him progress. He earned a fellowship of the Institute of Chartered Accountants and an accountancy post at Allied Breweries in Burton upon Trent.

In 1983 he married his beloved Linda, and they set up home in the picturesque village of Rolleston on Dove, just north of Burton. Tony and Linda had a mutual love for the south of France and would often make the long drive for holidays. Closer to home they were particularly fond of Newquay in Cornwall. Tony also enjoyed his music, especially jazz, but often listened to other genres too – in his youth he frequented Liverpool's Cavern Club and also Brian Epstein's music shop.

Tony joined the Charles Close Society within a year of its founding and became its first Honorary Auditor, a post he held for an incredible thirty-six years until his retirement in 2016. He was an outstanding auditor, not simply because he did the job exceedingly well, but also because he was so generous with his time and advice, the latter always given so tactfully that even the messiest numerical dog's breakfast would be unpicked with the minimum of fuss, rectified with the kindest of explanations and rounded off with the biggest of smiles. He was made an Honorary Member in 2012.

Tony's interest in OS mapping was broad. He had good collections of all one-inch series, and focussed particularly on those areas he had come to know well through his walking: he had some wonderful Old Series composite sheets of Devon, Sussex and the Lake District, often with beautiful watercolour additions. Indeed his interests also extended beyond OS, with antiquarian maps by, for example, Greenwood, Chapman and Bowen.

Tony died aged 82 on 12 October 2021, still residing at Rolleston. His wife Linda predeceased him by just six weeks, and he leaves a stepson Scott.

With thanks for contributions from Scott Eaglesfield and Simon Richardson.

Professor Paul Bishop (1949-2022)



John Davies writes: Readers of *Sheetlines* will be familiar with Paul Bishop's prolific, meticulously-researched articles, appearing here from 2012 to the latest, published in this very issue. It was a great shock to learn of his untimely death on 25 January following a short illness.

Paul's many *Sheetlines* articles (which can be found in the CCS online archive) mainly focus on the use of large-scale Ordnance Survey maps to investigate the history of Scottish architecture and industry. They cover such topics as ha-has, limekilns, watermills, threshing mills, boundaries and the depiction of internal walls within buildings. Paul facilitated the Society's 2019 Scottish excursion and attended the Alnwick AGM; members who met him on these occasions can testify to his friendliness, warmth, good humour, enthusiasm and generosity.

Paul was Emeritus Professor of Geographical and Earth Sciences at Glasgow University and Chair of Trustees of the Scottish Local History Forum. He moved to Scotland from Australia in 1998, on his Glasgow appointment, and made his home in the miller's house of a former watermill in the Campsie Hills, just outside the city. He became fascinated by the rich local history of agriculture, mining, watermills and lime-burning which led to him establishing the Baldernock Local History Group and to appreciating the value of old OS mapping. He was elected a Fellow of the Royal Society of Edinburgh in 2004 and a Fellow of the Geological Society of America in 2011.

Paul grew up in New South Wales, took a Bachelor's degree and PhD at the School of Earth Sciences in Macquarie University, Sydney and later worked at the University of Sydney. In 1997 he took up a one-year Visiting Fellowship at the University of Edinburgh, during which time the Chair of Physical Geography at Glasgow was advertised, for which he applied and was appointed.

His death is a very sad loss to the Society and to his family, friends and colleagues who will miss him greatly.

OS 25-inch mapping of threshing mills in Scotland

Paul Bishop

OS mapping provides the potential to document past landscapes and land use and thereby to assess changes in landscape and land use over time. Richard Oliver's *Ordnance Survey Maps: a concise guide for historians* aims to guide such use of OS mapping. In my note in *Sheetlines* 120 on the mapping of watermills, I asked, among other things, whether the technology of a particular watermill – overshot, backshot, etc – could be inferred from OS mapping of the mill, a question that is still being addressed by new data I have received since that *Sheetlines* 120 piece was published. In this note, I examine how the OS mapped mills that threshed harvested grain to remove the husk from the grain. The key issue for the historian of land use in relation to OS mapping is that the presence of a threshing mill implies a grain crop that had to be threshed, even when other mills, powered by wind or water, are comparatively lacking. The distribution of threshing mills thus provides insight into the historical presence of arable farming, as has been assessed in relation to horse gins in Baldernock Parish in Scotland's western Central Belt.¹

Such threshing has been done for millennia using various flails to beat the grain or by beating the grain on a structure such as a threshing board.² The mechanised grain thresher was invented by the Scots millwright Andrew Meikle and patented in 1788 (*figure 1*).³ This thresher seems to have been adopted more quickly in Scotland and northern England than in southern England, where the use of the flail apparently persisted for much longer. This issue, which is beyond the scope of this paper, is explored in some depth by Stuart MacDonald.⁴

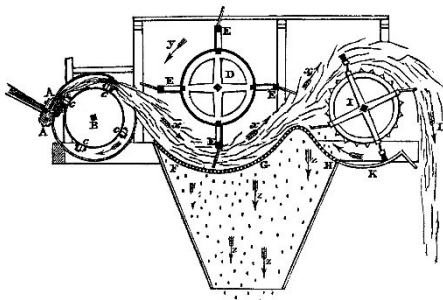


Figure 1. Diagram of Andrew Meikle's thresher. The unthreshed crop is introduced at left where it is held by clamps at AA and beaten by the projections on the rapidly rotating drum B. Drums D and I then carry the stalks forward, to be ejected at L. The grain and chaff fall down into a machine below where the chaff is winnowed from the grain.⁵

The commonest sources of power for such a thresher were water, via watermills, and animals, which were occasionally oxen but more usually horses in

¹ Paul Bishop, 'Horse gins in Baldernock, East Dunbartonshire', *Vernacular Building* 38 (2015), 7-26.

² Alexander Fenton, 'Threshing the grain', *Farming and the Land. Scottish Life and Society: A Compendium of Scottish Ethnology* Volume 2, John Donald, 2011, pp.717-732.

³ John Shaw, *Water Power in Scotland 1550-1870*, John Donald, 1984, pp.102-105.

⁴ Stuart MacDonald, 'The progress of the early threshing machine', *The Agricultural History Review* 23 (1975), 63-77.

⁵ David Low, *Elements of Practical Agriculture*, Edinburgh, 1874, available online on Google Books at <https://tinyurl.com/xvd7w9xe>, Figure 44.

a horse gin (also called a horse engine, a horse walk, a horse course, a horse gang, and so on). Wind was a third 'natural' power source, used only infrequently in Scotland, and then in due course steam power was used.

OS mapping of watermills for threshing

When the OS labelled watermills for threshing in Scotland (not all that commonly, as I note below), the Survey's practice seems to have been to use the term used in Scotland, namely, 'Thrashing' (*figures 2 and 3*). Also commonly used was 'T. Mill' (*figure 4*).

Linlithgowshire V.8 (Linlithgow)
 Survey date: 1854 to 1855 Publication date: 1856
 Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca.



Perth and Clackmannanshire LXXV.5 (Cargill & Scone (Det.))
 Survey date: 1861 Publication date: 1866
 Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca.

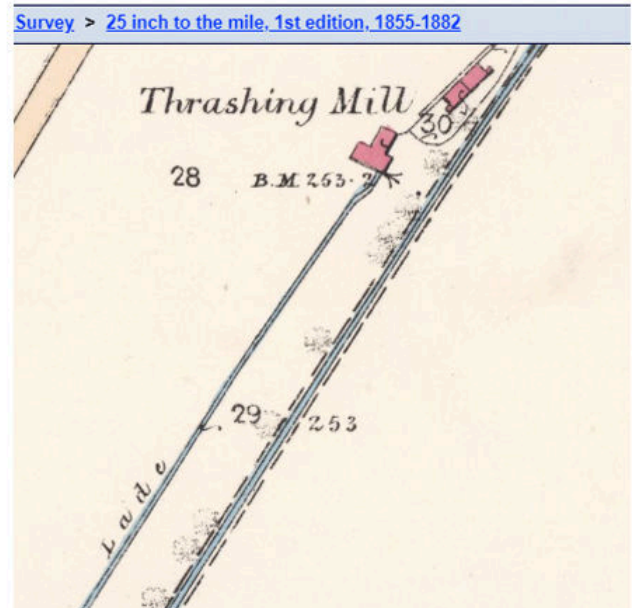


Figure 2 (left) : Riccarton Thrashing Mill, which was clearly driven by water power. This mill was disused by the time of the 25-inch second edition. The sheet details for this and all map extracts used here are as given on the National Library of Scotland maps website and are provided above the map extract to save long captions. All map extracts are published with the permission of the National Library of Scotland.

Figure 3 (right) : Thrashing mill near West Kinnochtry. This mill is 'down-lade' from water-powered corn and saw mills

Figure 4 (opposite) : Three examples of the 'T.Mill' label on OS maps. 4a Garshake T(hrashing) Mill in the hills to the north of Dumbarton; 4b T(hrashing) Mill at Banton, near Kilsyth. By the time of the 25-inch second edition both of these mills had become corn mills; 4c T(hrashing) Mill at Braeval, near Aberfoyle. Local tradition has it that the Braeval mill was a lint (flax) mill originally and on the 25-inch second edition the mill is unlabelled and the dam has become essentially silted up.

Dumbartonshire XXII.2 (Dumbarton)

Survey date: 1860 Publication date: 1862

Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca

Survey > [25 inch to the mile, 1st edition, 1855-1882](#)



Figure 4a

Stirlingshire XXIX.5 (Kilsyth)

Survey date: 1859 Publication date: 1862

Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches),

Survey > [25 inch to the mile, 1st edition, 1855-1882](#)



Figure 4b

Perth and Clackmannanshire CXXX.1 (Aberfoil)

Survey date: 1862 Publication date: 1864

Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches)

Survey > [25 inch to the mile, 1st edition, 1855-1882](#)

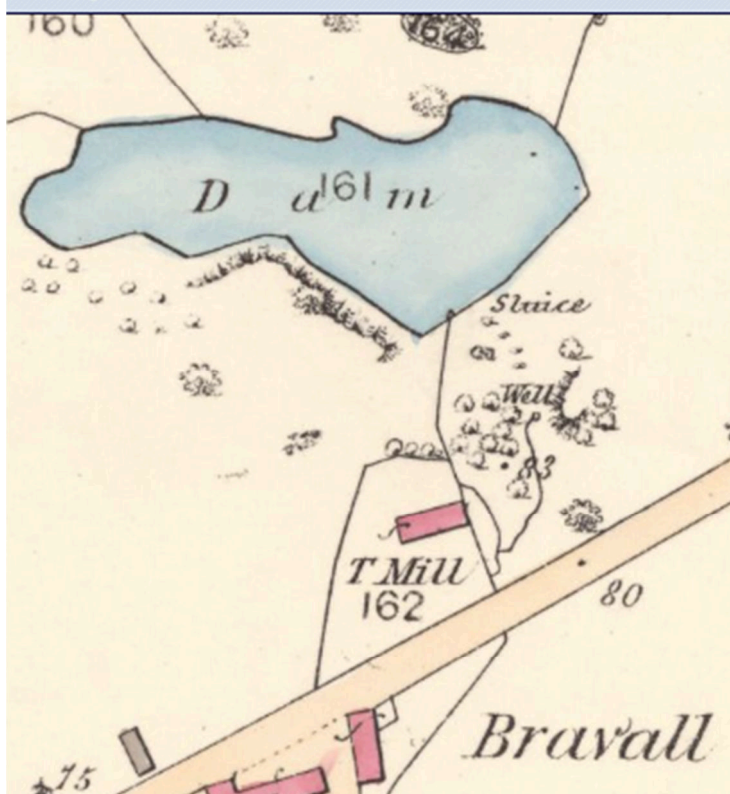


Figure 4c

A striking feature of the OS mapping in Scotland is in fact how few threshing mills seem to have been labelled, especially when the abundance of mapping and labelling of 'Mill Dams' and 'Sluices' must mean that many farms had a water-powered threshing mill in the farm buildings. Chapel farm near Dunscore in Dumfriesshire is a good example (*figure 5*) and three of many other examples are given in *figure 6* (p 11). The mapping of the arable areas of north-eastern Scotland is notable for showing many farms having a small dam with a sluice or sluices. Good examples of such mapping can be seen by browsing on the National Library of Scotland Maps website around the locality of North Commony in Aberdeenshire (NJ869485).

Dumfriesshire XL.9 (Dunscore)
 Survey date: 1856 Publication date: 1856
 Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca. 76

Survey > 25 inch to the mile, 1st edition, 1855-1882

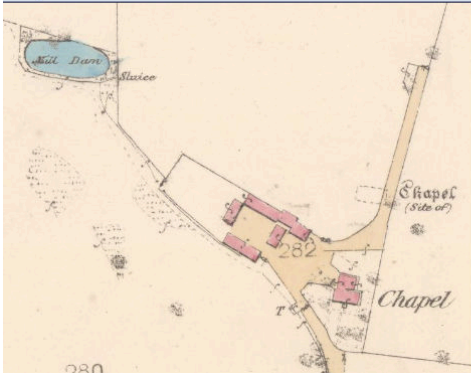


Figure 5: Left: OS first edition 25-inch mapping of Chapel farm near Dunscore showing the mill dam and sluice, with the lade (single line) leading to the unrepresented overshot water wheel and unlabelled threshing barn (above right). The water wheel is connected through the wall of the barn to the thrasher inside the barn (right). The sheaves were fed into the rollers at middle left and threshed in the lower drum, and elevated to the upper drum where the grain was winnowed. The lade at Chapel is piped and the second edition 25-inch mapping has a diagrammatic representation of the water wheel.⁶



The supposition that relatively few farm-based threshing/thrashing mills were labelled by the OS is confirmed by recent detailed work by brothers, Drs Alastair and Tom Robertson.⁷ This research is different from our OS-only based work, in that the Robertsonsons used multiple sources for their survey back to the 1750s, including, but not only, the National Library of Scotland (NLS) Watermills website being developed by the NLS's Chris Fleet and Glasgow PhD student Ms Iara Calton.⁸ The NLS Watermills website has identified 240 threshing mill sites across Scotland, based on labelled threshing mills plus sites in Historic Environment Scotland's Canmore data-base and others that were picked up in passing and which can be inferred to have had a threshing mill, based on the presence of dams and sluices related to a farm steading. For the river systems of Dumfriesshire and Galloway, for example, Alastair and Tom Robertson, using the multiple sources and systematically examining every river or burn in the river

⁶ Paul Bishop, *Sheetlines* 120 (2021), fig. 10.

⁷ Reported at <https://historicaljourneysalongbritishrivers.com/>

⁸ <https://maps.nls.uk/projects/mills/#zoom=6&lat=57.4000&lon=-3.7300>

networks, identified 976 threshing watermills in what were just three of Scotland's historic counties.⁹ Notwithstanding the fact that the Robertsons' research extends back to 1750, it seems clear that the Robertsons' careful examination of every stream in the river systems of Dumfriesshire and Galloway has identified far more threshing (thrashing) mills than were labelled by the OS and/or picked up from Canmore or in passing in developing the NLS Watermills website. In other words, the OS did not label all threshing mills based in farm steadings.

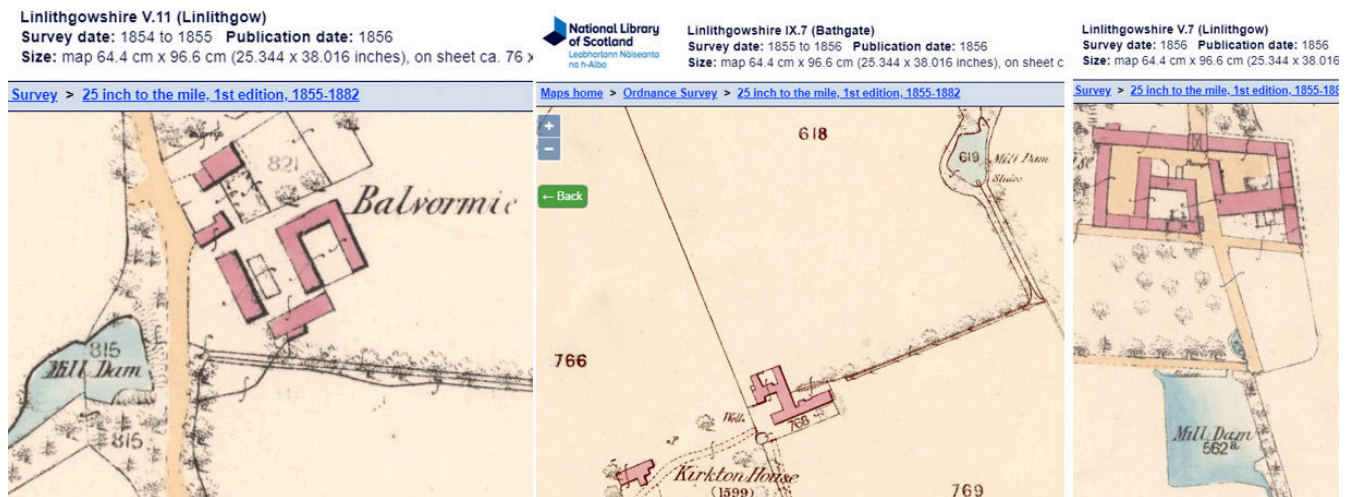


Figure 6 (see p9): Left: Balvornie; Middle: Kirkton House; Right: Preston House (all modern West Lothian). Three examples of first edition 25-inch OS mapping of farm steadings that each almost certainly included a threshing mill, as indicated by the labelling of a mill dam, a sluice in the middle example, and a single line from the mill dam to the steading that can be interpreted in each case as a mill lade.¹⁰ The second edition 25-inch mapping of both Balvornie (left) and Preston House (right) includes the labelling of a sluice at the head of the lade where it leaves the mill dam.

The horse gin (engine, house, walk, course, gang, mill etc)

As already noted, grain threshers were also driven by animal power, generally by horses walking in a circle and attached to the arms of a mechanism that drove the thresher in an adjacent barn. The mechanism to which the horses were attached in a circular walk could be roofed or in the open air. If the circular walk was in the open air, the drive to the barn was underground (*figures 7*), whereas in a roofed walk the drive was generally overhead to the adjacent barn (*figure 8*).¹¹

⁹ See the Addendum at <https://drtomsbooks.files.wordpress.com/2021/04/8.-overview-of-the-watermills-of-galloway.pdf>

¹⁰ Paul Bishop, *Sheetlines* 120 (2021).

¹¹ Paul Bishop, 'Horse gins in Baldernock, East Dunbartonshire', *op.cit.* has more detail on the mechanisms plus illustrations of the interesting architecture/construction of the roofed horse gins.



Figure 7: Images of two open-air horse gins in Northern Ireland that show some of the mechanism. Left: Excavation of the open-air horse gin at Creevyloughgare, Saintfield, County Down, showing the subsurface structure including the underground trough that carried the drive shaft to the adjacent barn.¹² Right: The arm of the open-air horse gin at Greenhill, Annahilt, County Down, also with parts of the mechanism visible half-way back towards the building and at the base of the building itself. This horse gin drove a creamery churn and the linear diagonal and vertical structures at centre on the farm building wall are parts of the mechanism to transfer power to an overhead drive at the churn.¹³

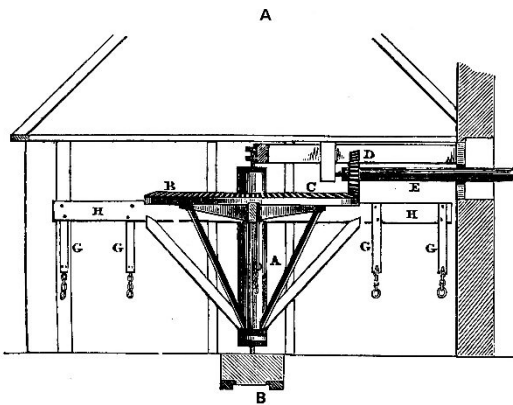


Figure 8 (left) : The mechanism of a roofed horse gin. Horses were yoked (G) to the driving beam H. As they walked round, power was transmitted by the gearing to the drive shaft and through to the thresher in the barn at right.¹⁴

The OS seems mostly to have represented open-air horse gins as a dashed circle with a dot at the centre, representing the circular walk around a central pivot (figures 9 and 10). There are examples, however, of a full circle with a dot at the centre, perhaps indicating low walling around the horse walk.¹⁵

¹² Harry Welsh, 'Horse gin, Creevyloughgare, Saintfield, County Down', *Ulster Archaeological Society Survey Report* 56 (2016), Figure 06.

¹³ Ian Gillespie, 'Survey of Greenhill, Annahilt, Co. Down', *Ulster Archaeological Society Survey Report* 5 UAS 06/05 (2007), Figure 29.

¹⁴ Source: Alexander Fenton, *Scottish Country Life*, John Donald, 1976, Figure 40b.

¹⁵ For example, at <https://tinyurl.com/bu2d2467>



Figure 9 : Left, Central pivot post of open-air horse gin and adjacent barn at Wester Kittochside, near East Kilbride (now Scotland's National Museum of Rural Life). Centre, Second edition 25-inch mapping of what appears to be two open-air horse gins at Wester Kittochside. Right, 25-inch mapping on the edition of 1912 of one open-air horse gin as shown in the picture at left. The dashed circle symbol is of apparently larger diameter than that mapped on that spot in the second edition but that could perhaps reflect poor surveying and/or drawing.¹⁶ A horse gin is not shown on the first edition 25-inch mapping of Wester Kittochside.



Figure 10 : Left, Open-air horse gin at Loch Farm, modern East Dunbartonshire (image courtesy of Don Martin and reproduced with the permission of East Dunbartonshire Archives & Local Studies). Right: OS 25-inch second edition representation of the open-air horse gin at Loch Farm.

Roofed horse gins generally have one of two main 'footprints' as would be mapped, namely, a circular or polygonal structure that is tangential to the adjacent threshing barn, or an apsidal (half-round) structure, consisting of a semi-circular structure attached to the adjacent barn by two parallel straight walls (as in

¹⁶ pers. comm Richard Oliver, email 2 August 2021.

a modern, half-circle conservatory or the apse of a church, hence the name) (*figure 11*). The polygonal tangential form can consist of from four walls (square or diamond footprints) up to eight walls (octagon). The roof of a tangential structure can be conical (as in *figure 11 left*) or segmental consisting of triangular planes. A conical roof does not imply a circular footprint and nor does a segmental roof imply a polygonal footprint.¹⁷

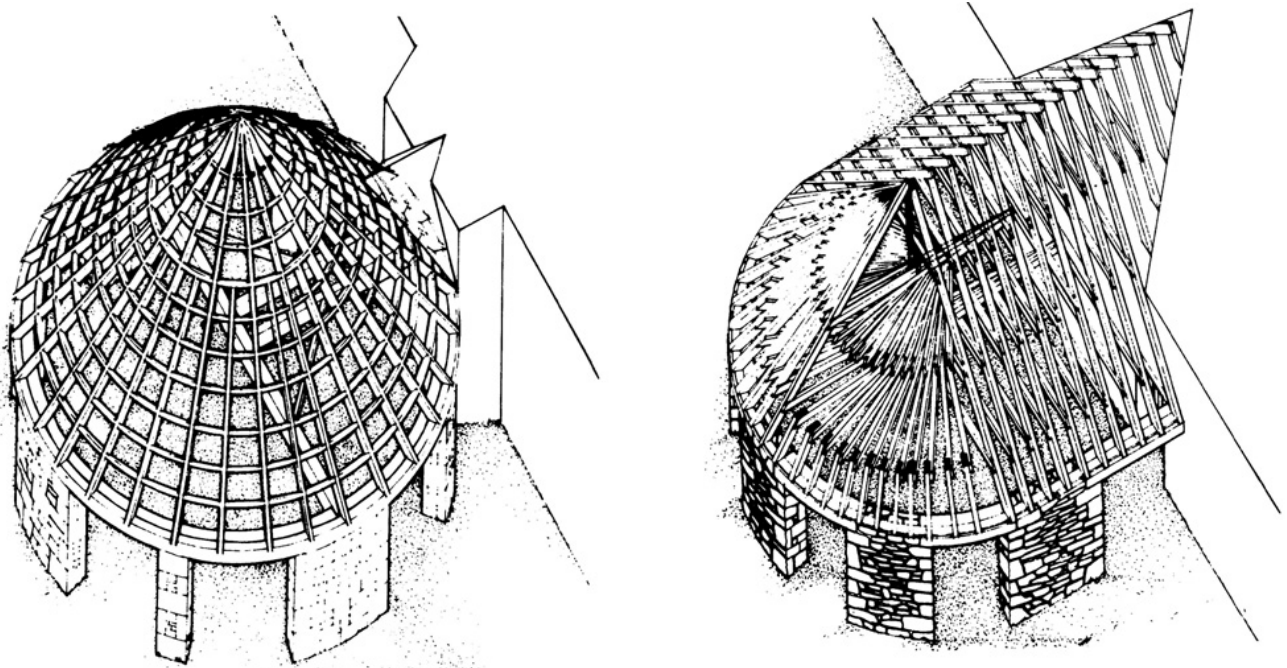


Figure 11: Isometric drawings of the circular (tangential) horse gin type (left) and the apsidal (half-circle) type (right). In these examples, the tangential structure (left) has a circular footprint whereas the apsidal appears to have a polygonal footprint, with straight wall segments. The gaps between the wall segments are for air circulation to cool the working animals.¹⁸ Fenton and Walker have suggested that most horse gins were located on the north side of the adjoining barn, to aid the cooling of the horses¹⁹, but such a north-side preponderance has not been particularly noted in the (unsystematic) survey of horse gins for this paper.

The distinctive footprints of horse gins means that they are generally obviously depicted in mapping (*figure 12*) and there is a long history of such representation (*figure 13*). The examples in *figure 12* mean that we can have confidence in using OS mapping to identify former horse gins but a note of caution relates to semi-circular architectural elements. These are not uncommon in houses in Scotland where they mark stair-wells or other architectural features (*figure 14*). The *figure 14* caption indicates one way in which such architectural elements can be distinguished from a horse gin, and the diameter of such an element, versus the typical diameters of horse gins, should also be a guide. As I

¹⁷ See Paul Bishop, 'Horse gins in Baldernock, East Dunbartonshire', *op.cit.* for more detail.

¹⁸ Source: Alexander Fenton, *Scottish Country Life*, John Donald, 1976, Figure 41.

¹⁹ Alexander Fenton and Bruce Walker, *The Rural Architecture of Scotland*, John Donald, 1981, p.173.

have noted elsewhere in relation to a small sample of the 15 horse gins in Baldernock Parish:

Diameters of all Baldernock gins were measured to a precision of 0.05 mm with a vernier caliper on the [paper] 25-inch sheets and converted to the imperial units that operated when the gins were built. They are not reported here with any more precision than as a range because of uncertainties that attach to the surveying, cartography and engraving of the maps, as well as to distortions of the paper on which the maps were printed. That said, the frequency distribution of measured gin diameters is: 22-27 feet: five; 27-32 feet: three; and 32-37 feet: seven. The diameter of the half-circle portion of the Wester Blairskaith gin [figure 11 here] was measured on both Google Earth and the 25-inch sheet as 30 feet, and so it is likely that the diameters as measured from the 25-inch maps are broadly accurate.²⁰

Measured diameters of horse gins in an area with an equivocal semi-circular feature attached to the side of a building will help to clarify the nature of that feature.

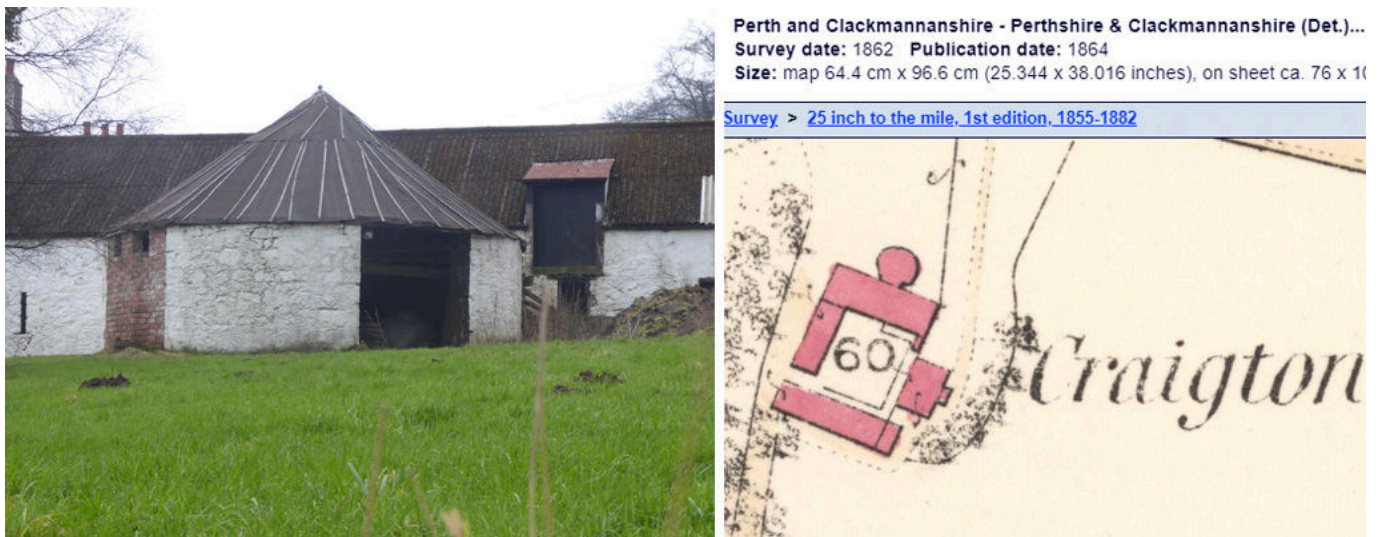


Figure 12a : the extant circular horse gin on Craigton farm near Stirling (image courtesy of Jim Beck) and its representation on OS first edition 25-inch mapping.

²⁰ Paul Bishop, 'Horse gins in Baldernock, East Dunbartonshire', *op.cit.*, p.26.

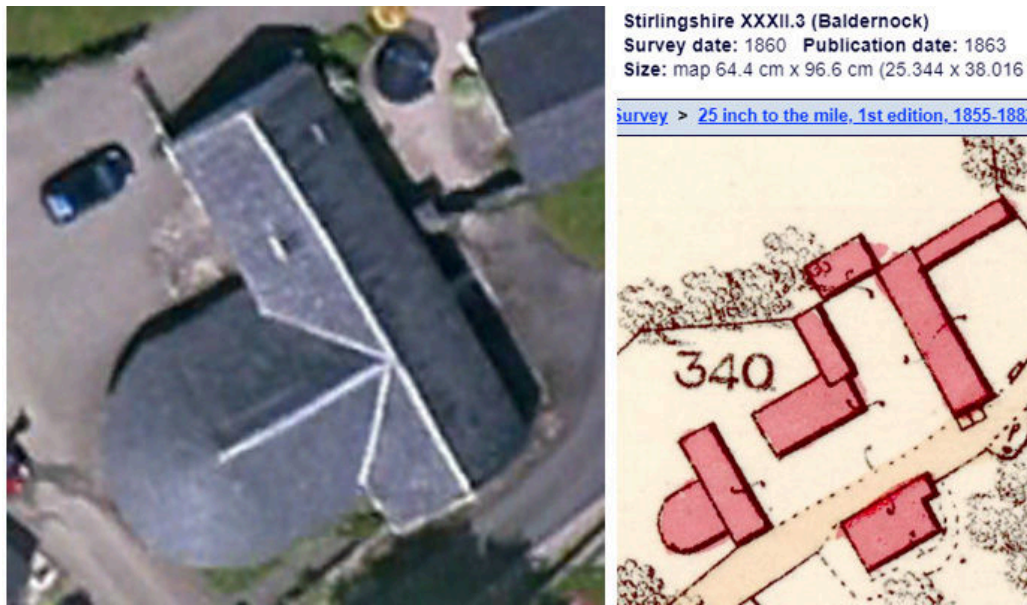


Figure 12b : Google Earth image of the extant apsidal horse gin at Wester Blairskaith in Baldernock (modern East Dunbartonshire) and its representation at bottom left on OS first edition 25-inch mapping.

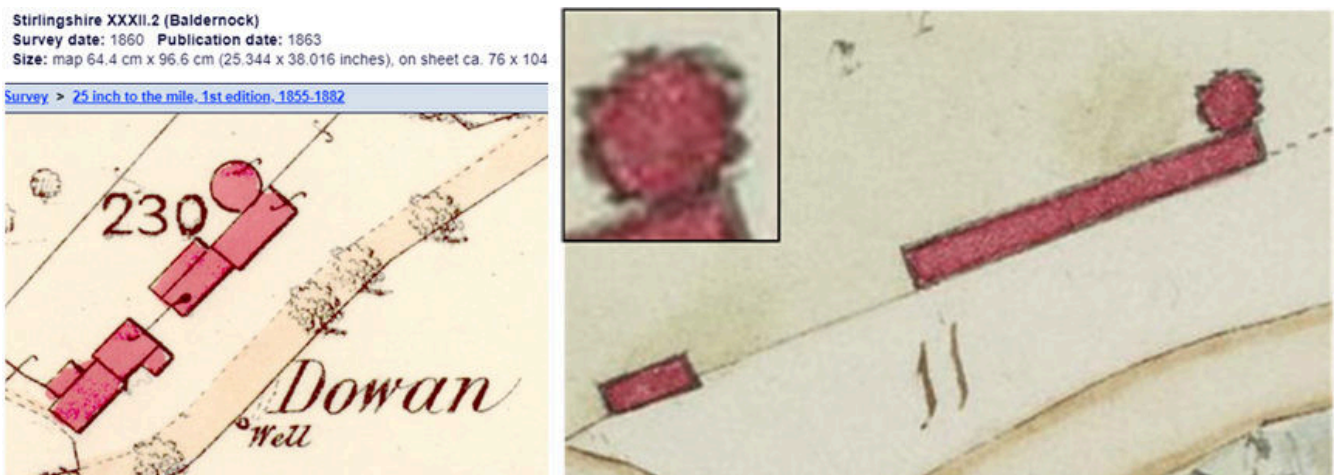


Figure 13: Left, Dowan Farm house and steading, Baldernock (modern East Dunbartonshire), on OS first edition 25-inch mapping, showing circular horse gin at centre top. Right, Dowan Farm house and steading on an 1805 plan of farms on Dougalston Estate. Note circular horse gin at top right. The circular outline of the horse gin (enlarged upper left) is apparently represented in a dot-dash symbology that can be interpreted to represent the alternating columns and ventilation openings in the gin's walls (cf. figure 11). The small farm-house at left in main image has a 1797 date stone over the former front door and the steading has been much added to between 1805 (right) and 1860 (left). (The extract of the Plans of the Estate of Dougalston, Dunbartonshire & Stirlingshire dated 1805 (National Records of Scotland RHP5302/4 'Dowan'), from the records of Thomson & Baxter WS, is published with the permission of Gillespie Macandrew LLP as successor legal firm to Thomson & Baxter WS.)

Stirlingshire XXXII.3 (Baldernock)
 Survey date: 1860 Publication date: 1863
 Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca. 76 x 104 cm

Stirlingshire XXXII.3 (Baldernock)
 Revised: 1896, Publication date: 1897
 Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on

[Maps home](#) > [Ordnance Survey](#) > [25 inch to the mile, 1st edition, 1855-1882](#)



[Survey](#) > [25 inch 2nd and later editions, 1892-1949](#)

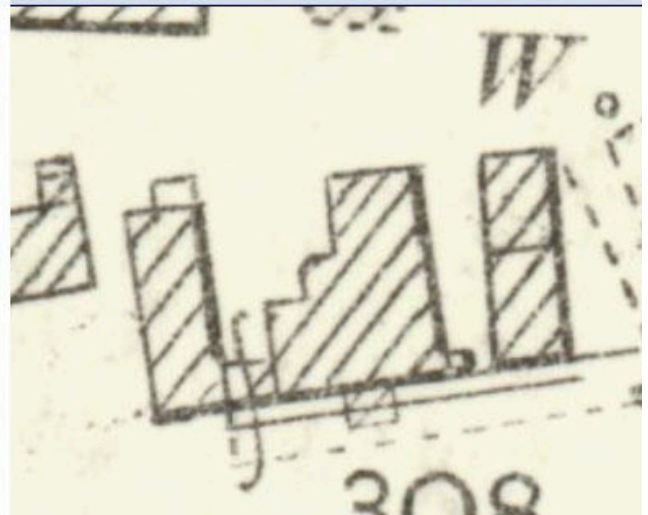


Figure 14 : Baldernock Parish's North Bardowie farmhouse and steading on 25-inch mapping by the OS – left is first edition and right is second. In the first edition map, note the open-air horse gin at bottom left (evidently with solid walls) and the apsidal form on the north wall of the central building (the farmhouse). That this apsidal form is not a horse gin is confirmed by its size compared with that of the horse gin. This apsidal form is also clearly part of the house because it was partially incorporated into the east wing of the house that was added in the second half of the 19th century. The horse gin has disappeared by the second edition but evidence of its having been cleaned off the plate that was used to print the second edition appears to be faintly visible as a series of small random marks approximating a circle where the gin was located in the first edition.²¹

The instruction to OS surveyors, that ‘the line surveyed will be the perimeter of the building at ground level’²², means that OS mapping should indicate clearly whether the gin building was circular or polygonal. OS maps do show gins with polygonal forms and so it is clear that (at least some) surveyors followed the directive to map the building’s form at ground level (*figure 15*). I say ‘at least some’ in the preceding sentence because the ground-level footprint of, for example, the Wester Blairskaith gin in Baldernock is polygonal whereas the

²¹As Richard Oliver has noted (pers. comm. email 2 August 2021), this is an odd situation in that it is clear from the map itself (i.e., one does not need to know the details of the history of OS mapping) that the second edition map has been completely redrawn. In other words, if there were no horse gin at the locality at that time then it should not have been on the plate. My conjecture (and certainly not one communicated to me by Richard) is that perhaps short-cuts had been taken and when the mistake was realised, the non-existent horse gin was cleaned off.

²² Quoted by Richard Oliver, *Ordnance Survey Maps: a concise guide for historians*, Third Edition, CCS, 2013, p.89.

map shows it as (semi-)circular (*figure 12b*). Perhaps the field surveyor made a mistake or the draughtsman ‘smoothed’ the footprint.

Linlithgowshire V.8 (Linlithgow)

Survey date: 1854 to 1855 **Publication date:** 1856

Size: map 64.4 cm x 96.6 cm (25.344 x 38.016 inches), on sheet ca.



Figure 15 : Hexagonal (left) and circular (right) horse gins on adjacent farms near Linlithgow, modern West Lothian.

‘Thrashing machines’ on 6-inch mapping

The foregoing makes it clear that horse gins are readily identifiable by their footprint, and so not needing labelling, whereas water-powered threshing mills are less obvious yet often unlabelled. However, first edition 6-inch mapping of parts of Edinburghshire (modern Midlothian), which were completed when the 6-inch was still the basic scale of survey, do label horse gins, as ‘Thrashing machines’ (eg, *figure 16* from Sheet 4). Sheet 5 also has many examples of such labelling, applied to both circular and apsidal buildings attached to steadings. This practice is a little curious in light of the fact that the horse gin is generally readily identifiable by its footprint. However, there are some farm steadings with the ‘Thrashing Machine’ label and no obvious horse gin footprint (*figure 17*). I take the use of ‘machine’ and not ‘mill’, along with the lack of the dam and sluices infrastructure of a water mill, to mean that ‘machine’ here indicates a horse gin. Conversely, sheet 4 of Edinburghshire first edition 6-inch mapping includes at least one farm (West Langton) that has an obvious circular horse gin without a

‘Thrashing Machine’ label. And finally, there is at least one farm with a mill lead – Newfarm – that is labelled, as would be expected, ‘Thrashing Mill’ (*figure 18*).

Edinburghshire, sheet 4 (includes: Ecclesmachan; Kirknewton; Liv...
 Survey date: 1852, Publication date: 1853
 Size: map 61 x 92 cm (ca. 24 x 36 inches), on sheet ca. 70 x 100 cm (28 x 4

[Survey](#) > [Six-inch 1st edition, 1843-1882](#)



Figure 16 : Three labelled ‘Thrashing Machines’ (top middle, middle left and bottom right) on the first edition 6-inch mapping (modern Midlothian). The 6-inch was the basic scale of survey at this time.

Edinburghshire, sheet 4 (includes: Ecclesmachan; Kirknewton; Liv...
 Survey date: 1852, Publication date: 1853
 Size: map 61 x 92 cm (ca. 24 x 36 inches), on sheet ca. 70 x 100 cm (28 x

[Survey](#) > [Six-inch 1st edition, 1843-1882](#)



Figure 17 : Millrig farm steading in modern Midlothian with a ‘Thrashing Machine’ label and no obvious horse gin footprint.

Edinburghshire, sheet 4 (includes: Ecclesmachan; Kirknewton; Liv..

Survey date: 1852, Publication date: 1853

Size: map 61 x 92 cm (ca. 24 x 36 inches), on sheet ca. 70 x 100 cm (28

[Survey](#) > [Six-inch 1st edition, 1843-1882](#)

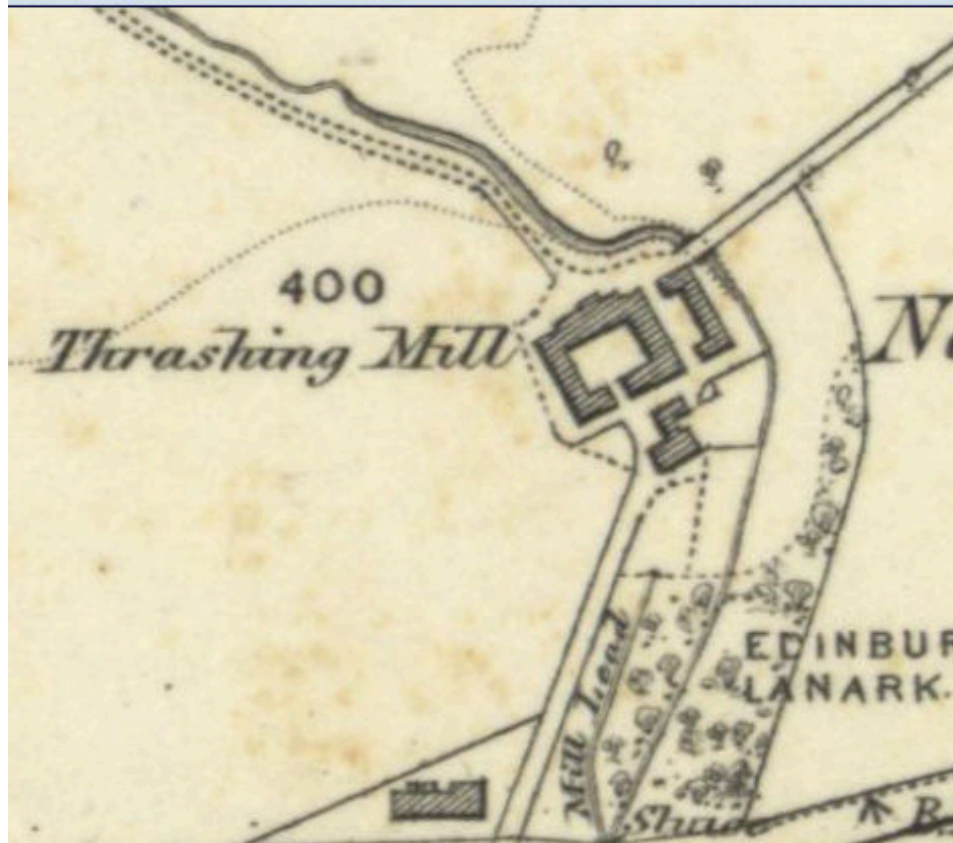


Figure 18 : Thrashing Mill with mill lead on Newfarm in modern Midlothian.

Wind power

Andrew Gray's *Explanation of the Engravings of the Most Important Implements of Husbandry Used in Scotland* (1814) includes a detailed diagram of the engineering for having a thresher powered by both a wind mill and a horse gin²³ but it seems that wind was used only rarely to power threshing mills in Scotland. John Hume reported nearly 45 years ago that there were only ten mills extant in Scotland that had been used for threshing and that these were an important part of Scotland's rural industrial heritage, being "one of the original modes of threshing-mill drive."²⁴ The OS labelling of by far and away the bulk of the 178 wind mills identified by the NLS Watermills website explicitly identifies them as for pumping. One example is known of such combined wind- and horse-powering of a thresher, Shortrigg (current spelling) in Dumfries and Galloway,

²³Andrew Gray, *Explanation of the Engravings of the Most Important Implements of Husbandry Used in Scotland*, Edinburgh, 1814. Available from Google Books at <https://tinyurl.com/3pxeu46d>

²⁴ John Hume, 'Scottish windmills: A preservation policy', *Vernacular Building* 5 (1979), 36-43.

but this example is not explicitly labelled by the OS to reveal the function of the windmill (*figure 19*).

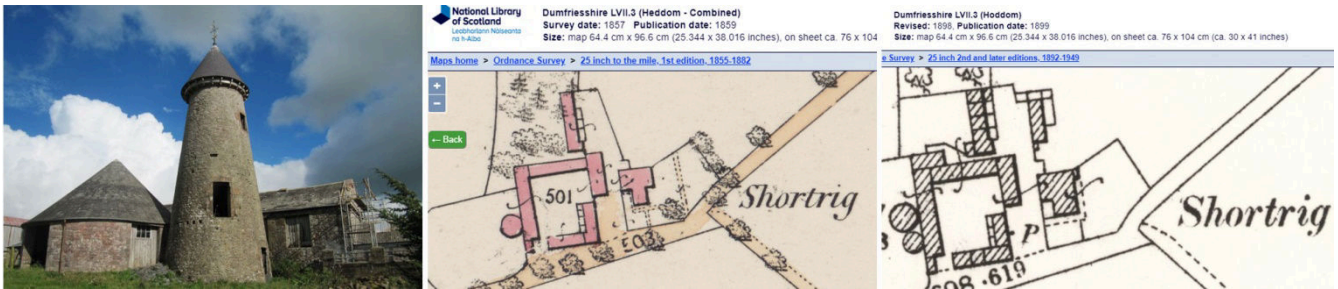


Figure 19 : Shortrigg farm in modern Dumfries and Galloway. Left: View from the southwest of the horse gin and windmill tower, which powered the thresher in the barn at rear (from the British Listed Buildings website : image by Chris Wood-Gee and its use licensed under the Creative Commons Attribution licence). Middle: OS 1st edition 25-inch mapping showing the windmill tower only. Right: OS 2nd edition 25-inch mapping showing the windmill tower and the larger-diameter circular outline of the horse gin immediately to the north of the tower.

Final thoughts

OS mapping of threshers in Scotland is somewhat patchy, especially in relation to the labelling of water-powered threshing mills. This is not to complain about a shortcoming but simply to note that caution is needed when using OS mapping to assess past land use, particularly when it is acknowledged that mapping land use was not the objective of the OS's work. As well, this apparent shortcoming presumably also reflects the surveyor's difficulty in knowing whether there was a thresher in a barn, especially if the water-wheel that powered that thresher was enclosed. But obvious cases of water-power with an external unenclosed water-wheel, as at Chapel farm (*figure 5*), were not identified as driving a grain thresher. In other cases, however, the thresher in the barn was known about (*figures 2-4*).

It seems clear that the horse gin has such a distinctive footprint (plan-view shape) that the researcher should be able to identify most examples and draw the appropriate conclusions about past land use. Once the horse gin is superseded, then the conclusions become more speculative, as is illustrated by pre-OS mapping of the Porterstown farm in Dumfriesshire (*figure 20*).



Figure 20 (see overleaf)

Figure 20 (previous page) : Porterstown farm (modern Dumfries and Galloway) in (left) an anonymous map of 1820, (middle) a map of 1823 by W&D Crawford, and (right) a map of 1845 by McCallum & Dundas. Note that the horse gin has disappeared by 1845, replaced, it is assumed, by a water-powered thresher, as indicated by the presence of a mill pond and lade. The same arrangement as in 1845 is shown on the OS first edition 25-inch mapping. The 'invisibility' of the water-powered thresher is evident once again. It is worth noting that the stack yard, where built stacks of grain to be threshed were stored prior to threshing, were routinely identified on pre-OS maps (as here) but OS did not continue this practice and nor did McCallum & Dundas in their 1845 map above (right). A hint as to what took place in the building adjacent to the stack yard was therefore lost. (Plans published by the permission of the Duke of Buccleuch and Queensberry KT and courtesy of the Dumfries Archival Mapping Project [DAMP] and the National Library of Scotland)

A further area of uncertainty arises when a farm is mapped with a horse gin and a (mill) dam and lade and/or as having two gins (figures 21 and 22).

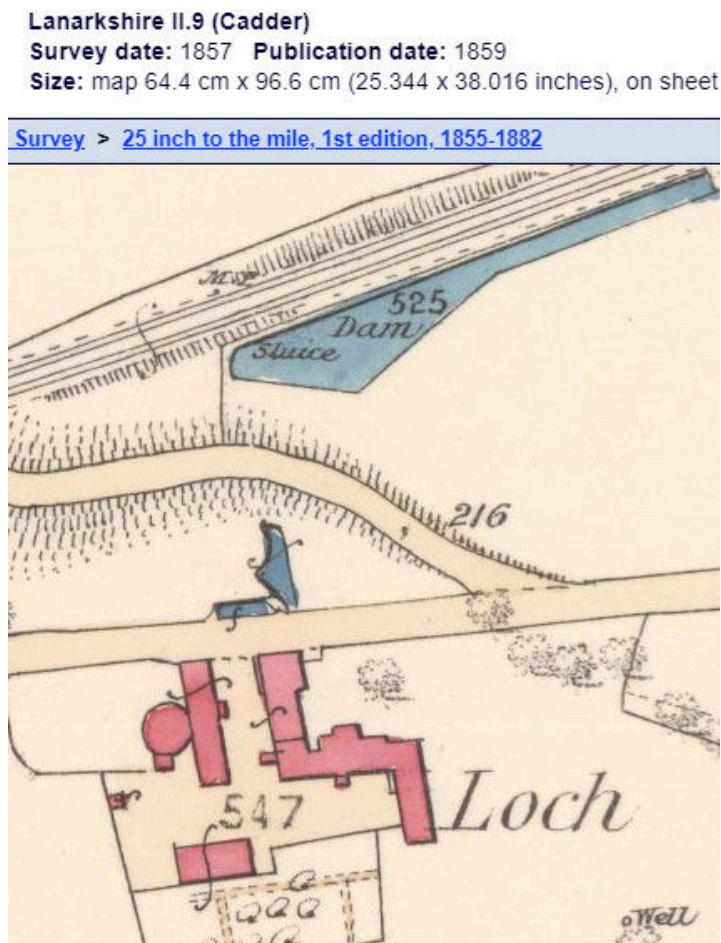


Figure 21 : Loch farm on the 1st edition 25-inch mapping, showing a dam and sluice as well as a roofed horse gin. See figure 10 for the second edition mapping, by which time the gin had been relocated to an open-air position and the dam and sluice were still present.

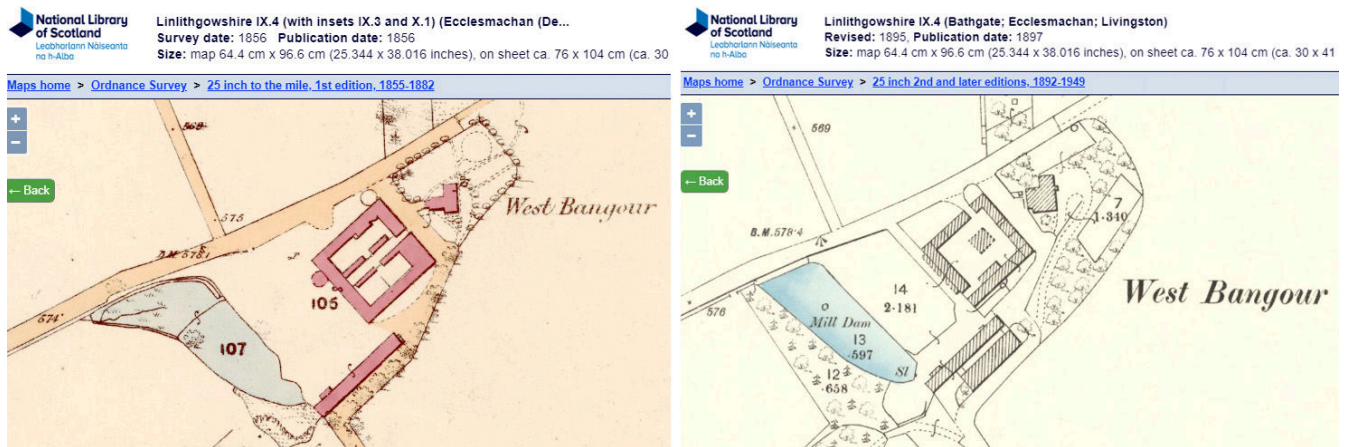


Figure 22 : West Bangour farm (modern West Lothian) on (left) the first edition 25-inch mapping and (right) second edition 25-inch mapping, showing that in the 1850s (left) the farm had a dam and (presumed) lade plus two horse gins, one roofed and one unroofed. By the 1890s (right), the dam is explicitly labelled as a mill dam with a sluice and the unroofed horse gin at upper centre had apparently taken on a more apsidal footprint.

So, what can we conclude concerning threshing technology in Scotland in the mid-19th century and subsequently? Notwithstanding uncertainties in the mapping and labelling of threshers, we see threshing technology changing through time. Thrashing mills are converted to other uses, and in the case of Shortrigg farm, a horse gin apparently replaced a windmill for threshing (*figure 19*). We see indications of individual farms using both horse gins and watermills for threshing, which was not expected at the start of this review of the mapping of threshing and might reflect the fact that a horse gin acted as a back-up to a water mill during periods of low river flow. It is not yet clear whether horse gins largely replaced watermills or vice versa, and careful examination of estate plans might reveal overall trends. For example, 1834 plans of Rehal farm in Dumfriesshire (modern Dumfries and Galloway) indicate the intention to replace a horse gin by a water-powered threshing mill (*figure 23*). A note on the plan indicates that the annotations in red are for the farms “as they are intended to be after various improvements are accomplished.” Two reserved rights are shown in red “for proposed mill ponds”, one of which is shown in *figure 23* along with the horse gin overprinted in red presumably as part of the gin’s abandonment and the adoption of a water-powered threshing mill. The OS first edition 25-inch mapping in 1857²⁵ shows that the changes mooted in red in *figure 23* for Redhall (‘Redhouse’ by the mid-19th century) were indeed made and that by 1857 the mill dam had been infilled with sediment, though its outline was still clear. Perhaps a further shift in technology to power the thresher had been made by the mid-19th century.

²⁵ <https://maps.nls.uk/view/74944228#zoom=6&lat=4436&lon=9679&layers=BT>

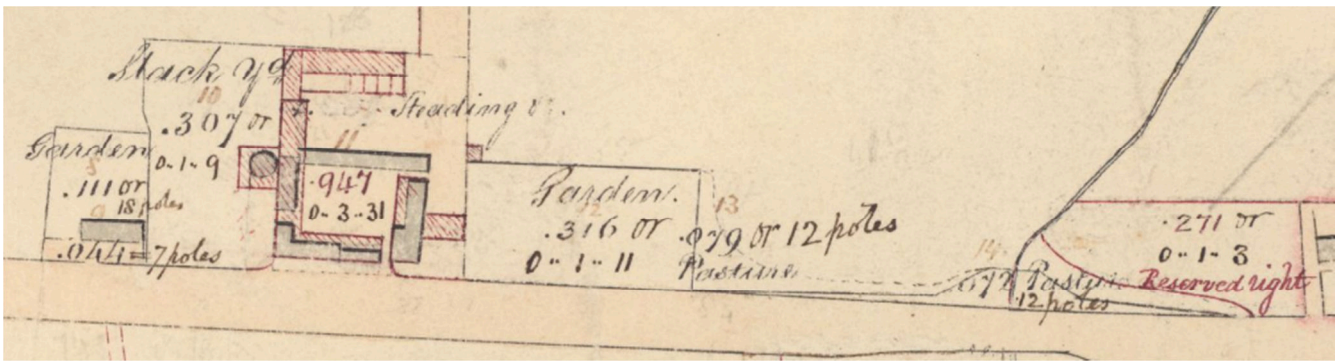


Figure 23 : Redball farm in modern Dumfries and Galloway with annotations in red to indicate proposed changes including the 'Reserved right' (at bottom right) for a mill dam. Note how the stack yard was located beside the horse gin.

OS mapping of Scotland did not necessarily 'catch' the switch from flails to mechanised threshing, which began in the late 18th century, but it was able to document some of the subsequent changes in the technology that powered threshing. And as steam power became more widely available, it came to power threshing in some farms. Indeed, the OS can also help in understanding and documenting that shift, in that the OS Name Books for Scotland have been digitised and are searchable online.²⁶ Searching the Name Books by 'steam' yields many tens of returns, such as: 'A good corn mill Known by this name [Lady Mill in Aberdeen], with dwelling house store houses, offices yard, garden etc attached the machinery in Mill is propelled by steam & water power'; and 'This [Wester Duntarvie in West Lothian] is a large farm stead with dwelling house of two storeys and garden; the thrashing machine is driven by steam.' The first of these provides the useful information that both water- and steam-power are used, and the second confirms that a steam-powered thresher was housed in steadings at Wester Duntarvie (*figure 24*). Steam power did not necessarily leave any mapped indication of its use, except where the steam boiler was large and needed a chimney stack that would have been mapped. In other words, although the switch from flail to thresher was not generally picked up by OS mapping, threshing by water power or horse power was generally clear, courtesy of the distinctive footprints and/or symbology of those power sources (albeit that the surveyor did not always look into the stead to see if there was indeed a water-powered thresher on the other side of the wall from the water wheel). The switch to steam – from either a stationary steam engine housed in a farm stead or a mobile steam engine that moved from farm to farm – was not so evident, especially if the footprints and symbology of the former power sources persisted, but the final shift in technology, to the combine harvester, meant that all mapped indication of the technology of threshing disappeared.

²⁶ <https://scotlandsplaces.gov.uk/records>.

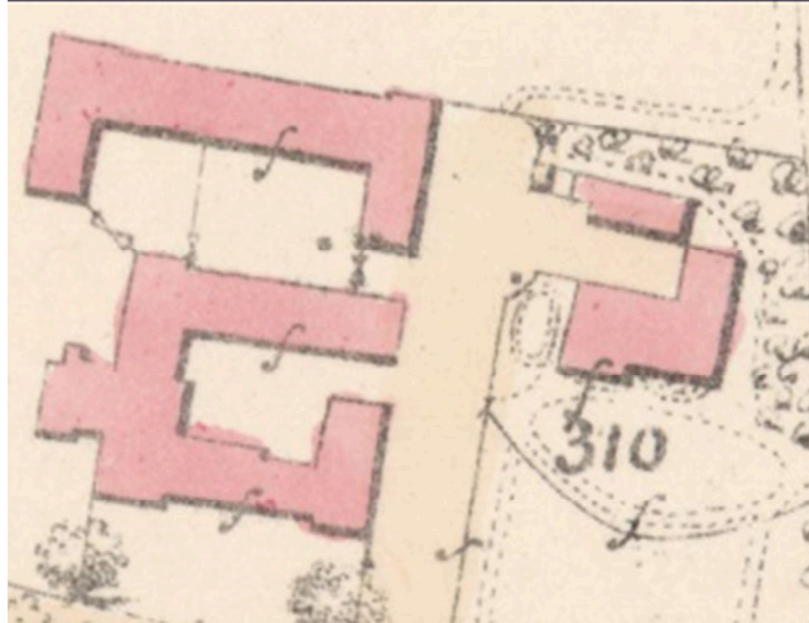
Linlithgowshire VI.2 (Abercorn)**Survey date:** 1855 **Publication date:** 1855**Size:** map 64.4 cm x 96.6 cm (25.344 x 38.016[Survey](#) > [25 inch to the mile, 1st edition, 1855-188](#)

Figure 24 : Wester Duntarvie farm, where the OS Name Book records that the thresher was steam-powered. Note how the thresher was not labelled and that there is nothing in the mapped footprint to indicate the use of steam power.

Acknowledgements

Joe Rose's mammoth work in 'cleaning up' the GB1900 data for this mills work must be acknowledged again and is much appreciated. I am grateful to: Alistair Borthwick and Archie McConnel for access to the Chapel thresher (*figure 5*); Don Martin and East Dunbartonshire Archives & Local Studies for permission to use the image in *figure 10*; Jim Beck for the image in *figure 12*; Mr Robert Graham-Campbell, CEO of Gillespie Macandrew LLP, for providing permission to use the extract of the plan of Dowan Farm (*figure 13*); and the Duke of Buccleuch and DAMP for permissions to use the extracts in *figures 20* and *23*. I also thank Chris Fleet of the NLS Maps Library for his continuing support and help, as well as PhD student Iara Calton for her thoughts and insights on watermills. Richard Oliver provided very helpful advice on the first draft of this paper, for which I am grateful.

The Ordnance Survey in the Isle of Man (1864-68)

Stephen Miller

William Harrison, a member of the House of Keys, the lower house of Tynwald, the Island's parliament, had raised the issue of a survey back in 1861, when he "mentioned that the Board of Ordnance surveyors had already taken the angles of the Island for a survey, and were now ready to go upon the land. He considered that a good map or plan of the Island was very much wanted."¹ The Clerk of the Rolls in response appeared to have little knowledge as he simply replied that "there was no doubt but the surveyors would visit this Island in regular rotation." Harrison's replied that "this would be a favourable time for urging it upon the attention of the Ordnance authorities." He was speaking at a session of Tynwald when the *Act for Disafforesting and Allotting the Commons* (1860) had been laid down for discussion and it was clear to many that there was a lack of any accurate mapping of the Island to hand.

In 1863, whilst difficulties with the disafforesting of the Commons were still rumbling on in Tynwald, Harrison again raised the issue of the Ordnance Survey. Mentioning that "an authentic map of the Island being very much required," and pointing out that the survey of England was completed, "he read a letter on this subject which he had received some time ago from the Board of Ordnance, and he solicited His Excellency to promote further information on the subject."² The Lieutenant-Governor answered simply that "he would communicate with the proper parties on the subject, and promote all possible information," and then moved on to the Weights and Measures Bill and the Embezzlement Bill. Later that year, there was to be movement on the issue in Tynwald. "From private correspondence which he had since received, his Excellency said he had reason to believe that such a survey would be undertaken at the expense of the Consolidated Fund, and that next year would see the commencement of it."³ Harrison saw his moment, and "after thanking his Excellency for the information, begged to move 'That this court requests that a survey be made, on the scale named by his Excellency the Lieut.-Governor.'—Seconded and agreed to."

"On Wednesday last, Mr Manners, of the royal engineers, arrived in Douglas, for the purpose of making preliminary arrangements for the great survey of this island."⁴ This was 21 September 1864, and later in November the rest of the party were in the Island: "Twenty-two Sappers and Miners have arrived here to take part in the survey of this Island now being made by order of the Board of Ordnance. Considerable progress have already been made with the survey, which is being carried out on the gigantic scale of twenty-five inches to the mile."⁵ The *Mona's Herald* also reported Manner's arrival, and wrote that "[i]t is expected that the survey of the Island will be completed in about two years. The insular

¹ *Mona's Herald* 20 March 1861.

² *Mona's Herald* 15 July 1863.

³ *Mona's Herald* 20 March 1863.

⁴ *Isle of Man Weekly Advertising Circular* 27 September 1864.

⁵ *Isle of Man Weekly Advertising Circular* 29 November 1864.

revenue will not be charged with the expense, as that will be defrayed by the Imperial Government.”⁶ They were correct as regards the time taken but mistaken concerning who would pick up the burden of the expenditure.

Early in 1866, it was reported “that the Southern half of the Isle of Man has been surveyed and that the remainder will be completed during the present year.”⁷ In November of that year, the draft maps of the Island were on display in the Court Houses in Douglas, Ramsey, Peel, and Castletown.⁸ In 1868, the Survey was reported as being now completed, and “[t]he cost of this survey will be defrayed out of the revenue of the Island,” a decision that would later lead to a dispute with London.⁹ December that year saw the first map appearing from the Survey, one for Santan in eight sheets, the smallest of the Island’s seventeen parishes.¹⁰

Tynwald met on 2 March 1869 and the business was to discuss proposals for large scale capital projects, such as repairing and replacing the Island’s crumbling harbours, building a Lunatic Asylum, rural police stations, moving the House of Key and the Courts to Douglas, and amongst this list, “[t]he cost of the ordnance survey comes next, and if we have to pay for that it will be a heavy pull upon our Insular purse.”¹¹ One consequence of this was soon reported: “We understand that the sale of the Ordnance maps is stopped, in consequence of the dispute as to whether the Insular or Imperial Government is to pay the cost of the survey is settled.”¹² In October the cost was revealed—a figure between £6,000 and £7,000 had been demanded by London, which amount the Lieutenant-Governor had negotiated down to £3,500, payable in instalments over the next three to four years.¹³ That the Island had to pay in the first instance was a surprise to some, and whilst the sum had been reduced it appeared still to be an arbitrary figure and one over which Tynwald had had no say whatsoever. It was pointed out that the Attorney General had resisted the claim made but it was fruitless as it was in any case a request by Tynwald in 1863 that the Island be so surveyed and as a consequence the charge would come upon the Insular and not the Imperial budget. It was pointed out that since 1 April 1866, greater fiscal autonomy had been granted to the Island, and so any work carried out after that date fell on the Island and was no longer paid for by London. A suggestion that the Island should at least reap the profits from the sales of maps had been followed up, but “there was scarcely any profit whatever on the copies—it would scarcely cover the actual cost of making the plans.” As regards the work on the ground, rather than the making of the plans, the newspapers reveal little to nothing. However, there are a number of births, debts, marriages, and deaths, that would not have

⁶ *Mona’s Herald* 28 September 1864.

⁷ *Manx Sun* 28 April 1866.

⁸ *Mona’s Herald* 20 October 1866.

⁹ *Mona’s Herald* 3 June 1868.

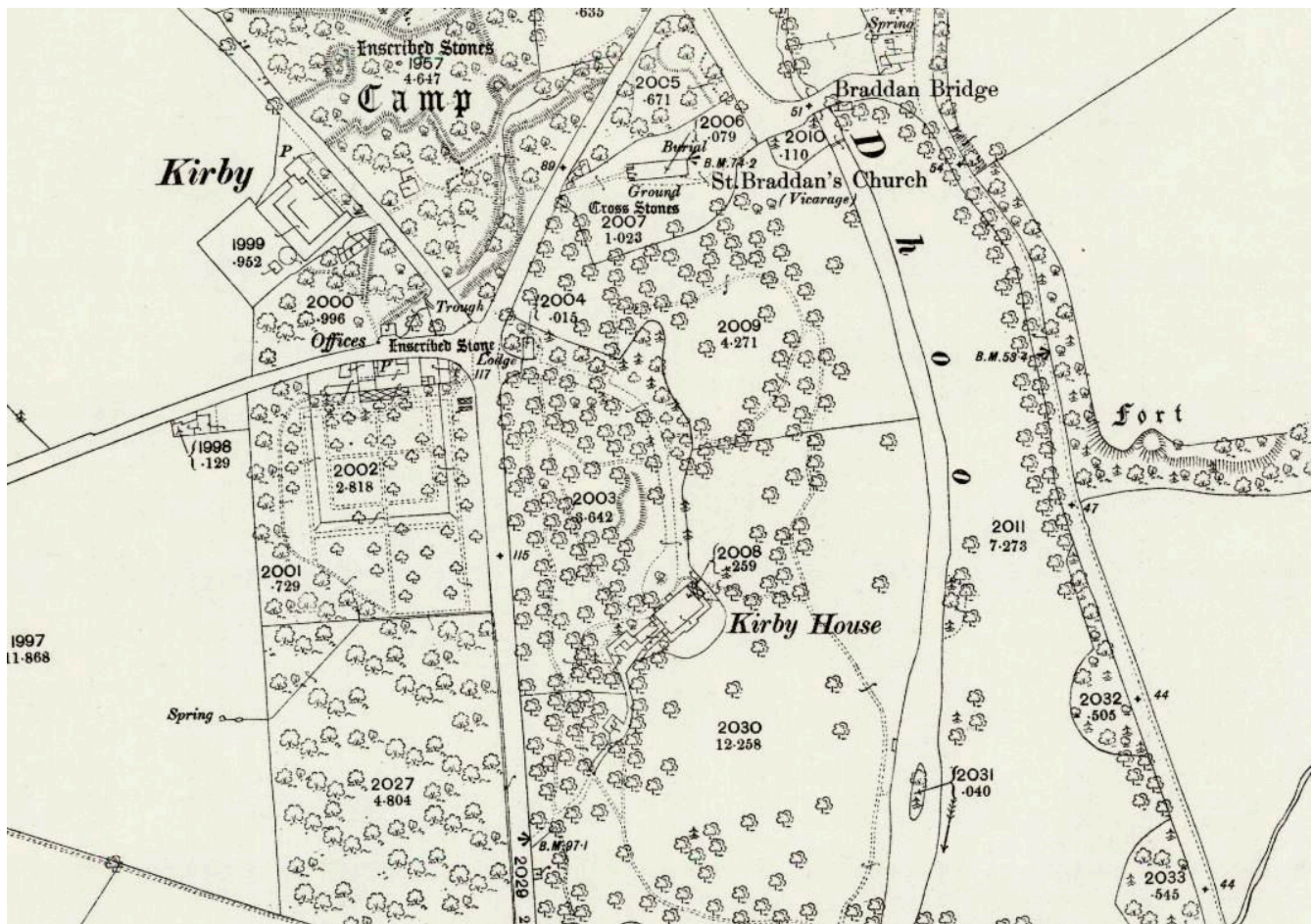
¹⁰ *Manx Sun* 19 December 1868. For the advert, see *Isle of Man Times* 1868.

¹¹ *Manx Sun* 6 March 1869: 4[d].

¹² *Mona’s Herald* 10 March 1869.

¹³ *Mona’s Herald* 3 November 1869.

occurred without the presence of the Ordnance Survey in the Island in those years.



Isle of Man XIII. 7, surveyed 1866 published 1879 (NLS)

Births

“On Tuesday the 12th inst., at the Grosvenor Inn, Kirk Andreas, the wife of Mr D. Oswald, Ordnance Survey, of a son”.¹⁴

Thomas Henry Oswald was christened in Andreas on 14 June 1868, the son of David Oswald (occupation given as “Ordnance surveyor”) and Jessie Blair. Oswald and Blair had married in Govan, Lanarkshire, on 31 March 1865. In the 1871 census he was living with his grandparents, Thomas and Janet Blair, at Fraser’s Land, Lochgilphead in Argyllshire; in 1881, he was still living with his grandparents at the same address. As regards his parents and siblings, they cannot be located in the 1871 census, but in 1881, David Oswald was still employed by the Ordnance Survey, living now in Castle Street, Melbourne, Shardlow, Derbyshire.

Debts

“Notice is Hereby Given, that the Officer Commanding the Surveying Parties of the Isle of Man, in no way holds himself responsible for the DEBTS of any Soldier of the Royal Engineers, or Civilian belonging to any of such Parties; and attention

¹⁴ *Manx Sun* 16 May 1868.

is directed to Public Proclamation within the Island, with reference to Soldiers' debts.

T.P. WHITE, Lieut. Royal Engineers.

Ordnance Survey Office, Glasgow, 16th April, 1866.”¹⁵

Marriages

“Harraghy—McMullen—Monday, October 16, at St Mary’s, Buck’s Road, by His Grace the Right Rev. Dr Herrington, Mr P. Harraghy, C.E., of the Ordnance Survey, to Miss Catherine McMullen, of Wellington Square, Douglas.”¹⁶

In the 1861 census, Catherine McMullen *née* Morgan (49) was married to Patrick McMullen (60), a hawker, living at 1 Callow Place, Douglas, together with their two sons, James (26), a carver and gilder, and John (20), a messenger. All bar John were born in Ireland. Her husband died in 1864, being interred at Braddan on 6 October (as McMullin). They had married in Douglas on 13 May 1854. She later married Patrick Harraghy (given as Harragher) on 16 October 1865. The pair cannot be found later in either the 1871 or 1881 census.

“Saturday, February 11, at Braddan, by the Rev. Wm. Drury, Mr Thomas Manners, Ordnance Survey, to Harriette, daughter of William Haslam, Esq., M.H.K., J.P., Ballaglass, Isle of Man.”¹⁷

In 1861, Harriet[te] Haslam was 18, living at Ballaglass, Maughold, with her parents and six siblings, along with four servants. Her father, William, farmed 200 acres aided by a workforce of eight. He was also a member of the House of Keys, and a Justice of the Peace. She is not found enumerated in the 1871 census. In 1881, she is found listed as a farmer’s wife, married but Thomas Manners is not present—his name was filled in but his first name scored through and Harriette’s name inserted instead. She was farming 136 acres at Channels End, Colmworth, Bedford, Bedfordshire, along with her three sons, Thomas Alexander (15), William Henry (12), Henry James (1), and with Sushanna Woodcock (24) as a servant. Her two eldest children were born in the Isle of Man, in 1866 and 1869 using the census declaration of ages, the youngest one in 1880 in Emberton, Buckinghamshire. Their births cannot be traced in the Island.

Deaths

“An inquest was held before His Worship the High Bailiff of Douglas on Thursday evening, at the house of Mr Charles Woodward, Port Soderic, on the body of John Seaton, a labourer employed in connexion with the Ordnance Survey of this Island. Deceased had been missing from his lodgings for about six weeks, and, although diligent search had been made, nothing could be learnt respecting him until his body was found floating off Fort Soderic on Thursday morning. [...]”

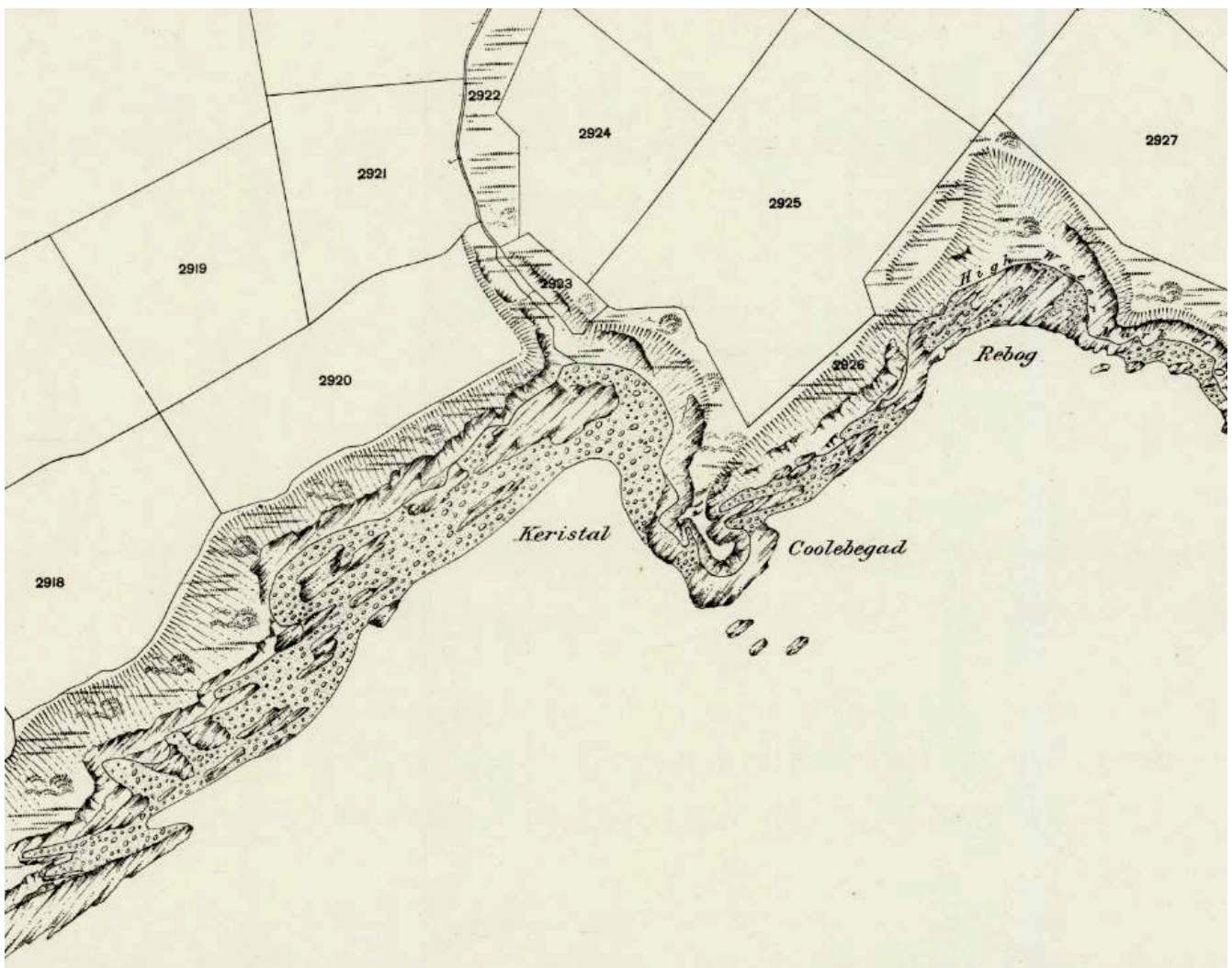
“*Henry Dalton* sworn, saith: I am a sapper in the Royal Engineers, and along with others engaged in the Government survey of the Isle of Man. We have been so engaged for the last four months, others have been engaged for a longer period. I came to the Island about four months since from Scotland, and I

¹⁵ *Mona’s Herald* 21 April 1866.

¹⁶ *Mona’s Herald* 25 October 1865.

¹⁷ *Mona’s Herald* 15 February 1865.

brought with me a man named John Seaton, about forty-four years of age, who had been connected with the Ordnance Survey many years as a chainman or labourer. When the said John Seaton came to this Island he was forwarded to St John's in this Island, in order to join the party of sappers there under the charge of Corporal Black. I have ...viewed and examined the body now lying on the shore at Port Soderic, and found this morning floating on the water as described by the former witnesses, and I identify the boots on the body, and the rest of the clothing as the boots and clothing worn by the said John Seaton when he was in the employ of the Ordnance Survey; and from the general appearance of the body I have no hesitation in saying that the body so lying on the shore is the body of the deceased John Seaton. He was, when on service on the survey, a man of sober habits; but previous, and at the time he was missed, he was taking his fortnight's holiday, and was not as temperate as might have been."¹⁸



Shoreline near Port Soderic (Isle of Man XIII.14, surveyed 1867/8, published 1869) (NLS)

¹⁸ *Mona's Herald* 23 May 1866.

Hidden in plain sight?

John Ambler

The chance purchase of two-and-a-half-inch (1:25,000) sheet SU85 Farnborough (Hants) at a flea market led me into this analysis of how security deletions impacted upon the depiction of the Royal Aircraft Establishment (RAE) and its airfield. The map with publication date 1958 was a 1961 reprint (with minor changes) and carries print code B/. The feature which immediately attracted my attention was the absence of any runways or other infrastructure associated with Farnborough airfield (now Farnborough International Airport) located to the south of Farnborough town centre. I immediately came to the conclusion that as the airfield was closely associated with the Government's military aviation research establishment, this was likely to be a security deletion. Perversely, some of the buildings of RAE itself and the railway which ran through the streets from Farnborough station to the RAE were shown. If a foreign power were intent on intelligence gathering that might be damaging to the British national interest, I would have thought the research establishment itself would be a better target than the runways which were easily visible from adjacent roads and the air.

I was already aware of security deletions affecting the depiction and/or labelling of "sensitive" locations, but it was the fact that Farnborough had been opened regularly to the aerospace trade and the public for over a decade when the map was reprinted that surprised me the most. The first Farnborough Air Show in 1948 was a week-long event, so anybody intent on intelligence gathering would have been able to explore and map significant areas of the airfield unchallenged. The revision information on the map includes "Compiled from 6-inch sheets last fully revised 1909-35. Other partial systematic revision 1938-56 has been incorporated", and "Made and published by the Director General of the Ordnance Survey, Chessington, Surrey 1958. Reprinted with minor changes 1961". Fascinated by the anomalies highlighted by the derivation of the two-and-a-half-inch map, I decided to review how the OS mapping of RAE Farnborough had been handled at various scales over the years since it came into existence. Map extracts are from my own collection unless otherwise credited in the captions.

To set the scene, *Figures 1 and 2* show the area under consideration before any development was shown on OS mapping on one-inch Third Edition, and six-inch maps published in 1914 and 1898 respectively. The dating of my Third Edition (outline) map is based on information in the cartobibliography in Hellyer and Oliver (2009) as the map itself had been dissected, mounted on linen, and placed into covers by Alfred Wilson, map and bookseller of 18 Gracechurch Street, London, who had retained very little marginalia, only half of the key being pasted on the rear, and no revision information at all. The price of 2s (10p) suggests that the map is no earlier than State 4 of 1914 – all higher numbered states also date to 1914, so I am reasonably confident this shows the last depiction of the area prior to publication of the Popular series. Note the positions of Cove Reservoir and Ively Farm on the one-inch map and the small hillock "Jersey Brow" and Swan Inn on the larger scale plan which are points of

reference which persisted through several generations of mapping and are highlighted in map extracts with overlaid blue crosses.

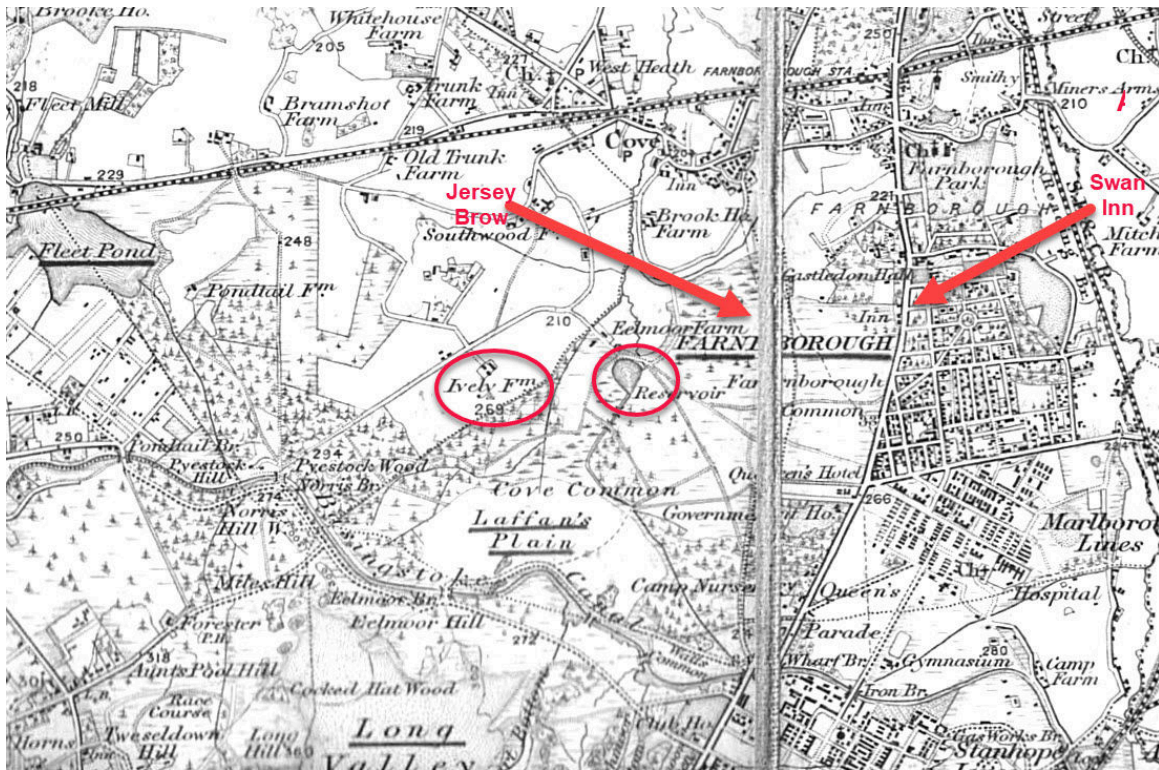


Figure 1: One-inch Third Edition 1914.

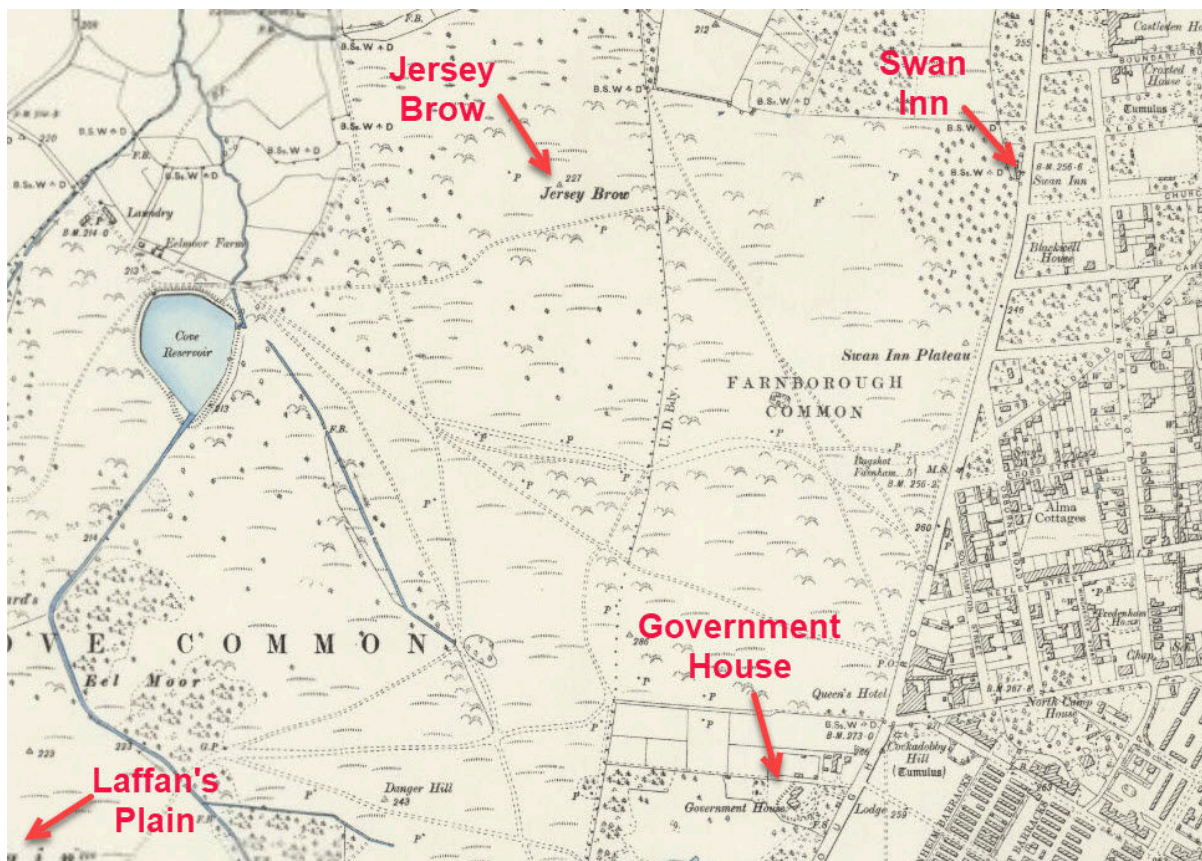


Figure 2: 6-inch 1898 (NLS).

The Swan Inn survives today on the A235 Farnborough Road on the junction opposite the Farnborough Air Sciences Trust (FAST) Museum, and the position of Jersey Brow approximates to the Airport Fire Station inside the security fence adjacent to Templar Avenue. Farnborough Common and Cove Common which are now home to Farnborough Airport can be seen to have been mainly unimproved scrubby land criss-crossed by tracks and small watercourses.

Large Scale Plans

The 6-inch and 25-inch plans essentially tell the same story, so I have concentrated on the smaller scale. The first sign of any aviation development at Farnborough (*Figure 3*) is seen on the plan published in 1912 (revised 1909) in the form of a balloon factory to the east of Jersey Brow (shown with a triangulation point at 227ft above sea level).

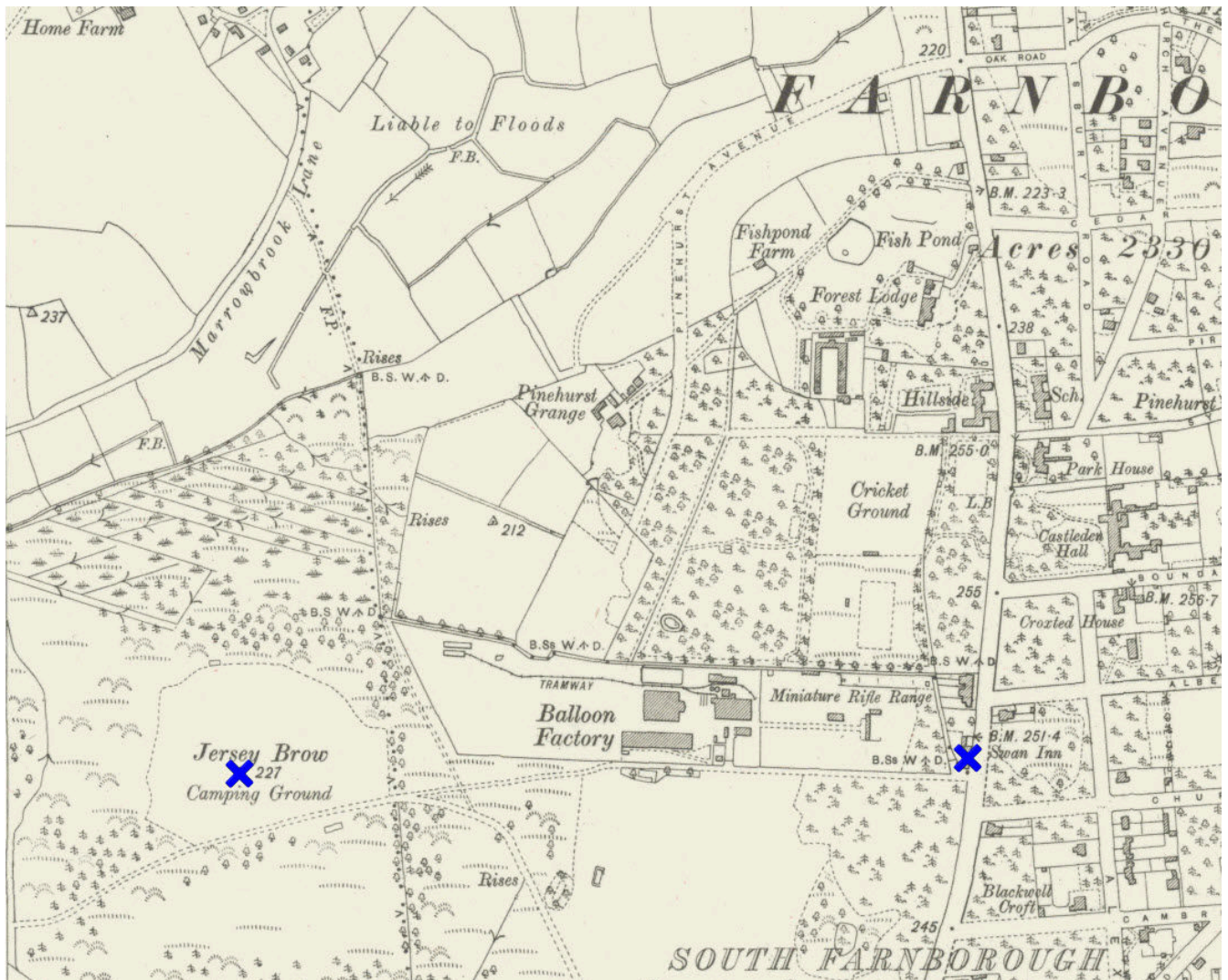


Figure 3: The Balloon Factory as depicted on the 6-inch editions of 1912 and 1920 (NLS).

The Army Balloon Factory (part of the Army School of Ballooning) was established in three large buildings around 1904 and the facilities included an internal tramway from the main buildings to a smaller structure at the western end of the site, and my guess would be that this was where hydrogen gas was

generated and kept separate for safety reasons until needed. As well as dirigible balloons (*ie* balloons able to navigate through the air under their own power), the factory experimented with Samuel Cody's war kites and powered aeroplanes, the first UK powered flight being made on Laffan's Plain about a mile south of the factory by Cody himself in 1908. Jersey Brow and Swan Inn Plateau to the south were both labelled "Camping Ground", probably associated with the extensive Army barracks at Aldershot to the south-east. The site came under civilian control in 1909 and was renamed the Royal Aircraft Factory in 1912 as depicted on the RAF plan of Farnborough Aerodrome and Surrounding Buildings (*Figure 4*) which is reproduced with the kind permission of FAST Archive.

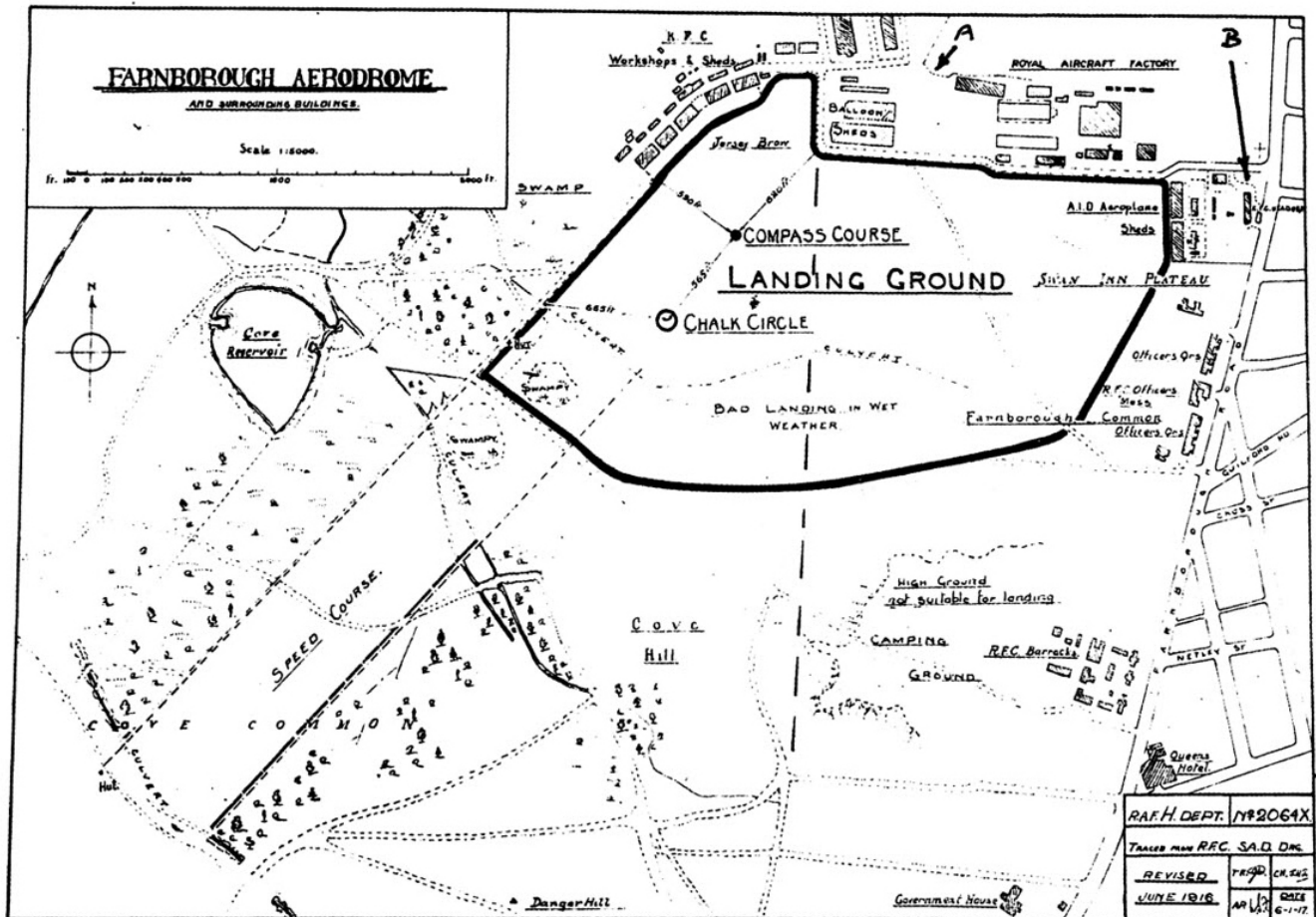


Figure 4: Royal Aircraft Factory plan of Farnborough Aerodrome, revised June 1916 (FAST Archive).

The next revision of the 6-inch plan for Hampshire published in 1920 (revised 1912-13) was essentially unchanged from the 1912 edition. However, the two subsequent revisions available from National Library of Scotland (NLS) published in 1932 (revised 1930) and 1946 (revised 1938) (*Figure 5*) were essentially very similar to each other and both censored, the Royal Aircraft Factory site (formerly the Balloon Factory) was no longer shown. By this date, the site had been renamed again (in 1918) as the Royal Aircraft Establishment (RAE) to avoid confusion with the Royal Air Force, formed in January 1918 and whose acronym was identical to that of the Royal Aircraft Factory. Although the factory itself was

deleted, part of the railway branch from Farnborough station goods yard (reputedly constructed by prisoners of war in 1917), was depicted but apparently terminating at the eastern end of the housing estate known as Rafborough, which had been built to provide accommodation for RAE workers. The line split into a number of short sidings at its apparent terminus beside Marrowbrook Lane where there was a long narrow building or loading dock. The trackbed of the railway line into the factory site can be made out as a cleared section curving through a lightly wooded area of rough pasture to the south of Rafborough. Although the rails into the factory appear to have been removed, they actually remained in place on this section until the railway was closed in 1969. The return arm of the loop through the factory which is shown on one-inch maps published between 1920 and 1929, is depicted as an embankment running northwards to join the main line in the area labelled “Liable to Floods”. Local army installations were not censored with the extensive Pinehurst Barracks being shown in detail.

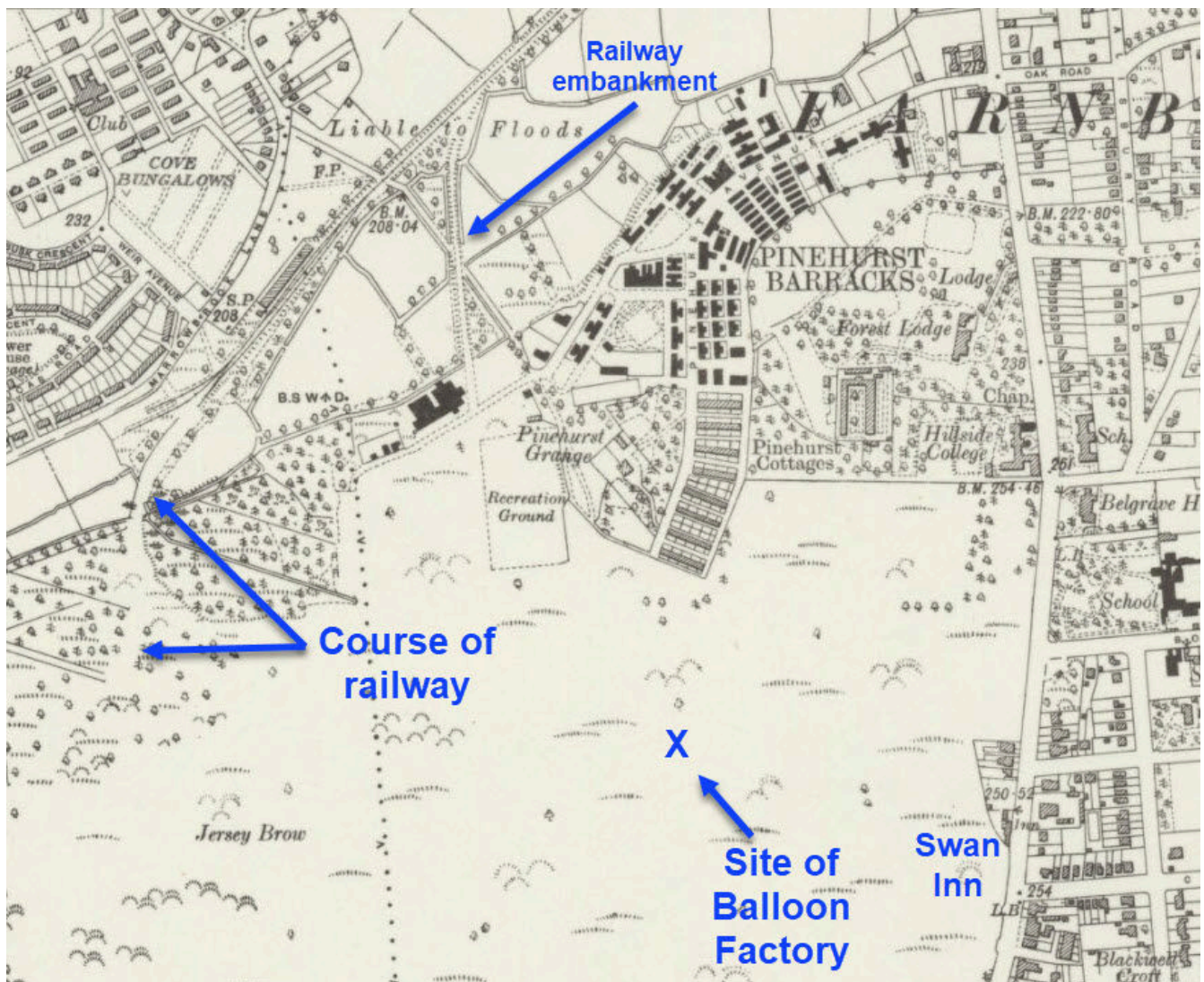


Figure 5: The site of RAE as depicted on the 6-inch editions of 1932 and 1946 (NLS).

The 1961 edition (*Figure 6*) of the 6-inch (1 in 10,560) map (Provisional Edition, revised 1930-1945, major changes 1956, boundaries 1-5-60) was much less censored than its predecessor in that it showed some buildings associated with western half of RAE and the railway that served it, but nothing on the site of the Balloon Factory which was due south of Pinehurst cottages, mid-way between Jersey Brow and The Swan Inn, and still nothing of the airfield. I have not been able to access any later issues of the 1 in 10,560 map series to determine when censorship might have ended.

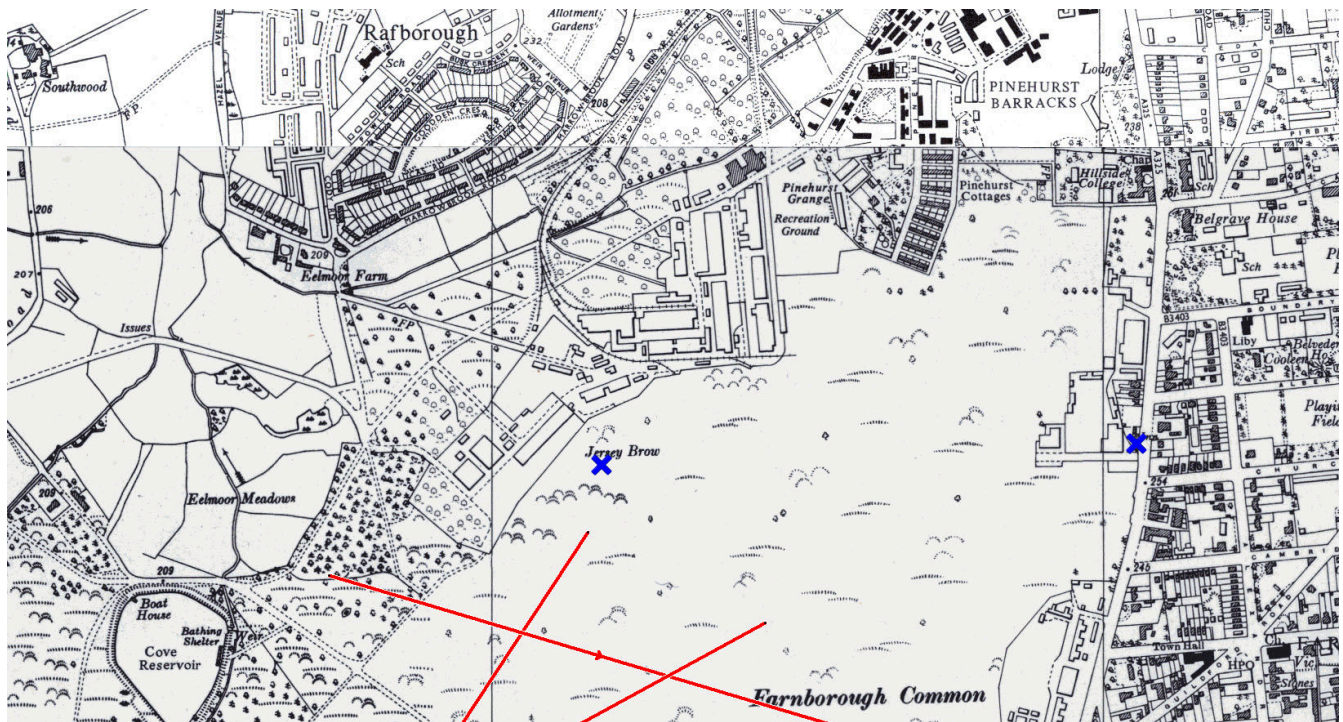


Figure 6: The site of RAE as depicted on the 1 in 10,560 sheets SU 85NE and SU 86SE in 1961, with the WW2 runways overlaid in red.

1:25,000 Maps

The First Series Sheet for Farnborough was published with two basic revision as Sheet 41/85 (Revision A) in 1949 (*Figure 7*) and as SU 85 (Revision B) in 1958 (*Figure 8*) with minor revisions B/ and B//* in 1961 and 1973 respectively (Hellyer, 2003). Both revision A and B are censored and show no detail whatsoever of the airfield. Pinehurst Cottages and Pinehurst Barracks which had been shown on the 6-inch map since the 1923 edition, were omitted on the A imprint of 1949. By the time of publication of the B/ imprint of 1961, there appears to have been a relaxation of the approach to the depiction of the RAE buildings, some at the western end of the site being shown as well as the Pinehurst Cottages and Barracks. On the 1949 edition, the railway branch is shown as terminating at the south-eastern corner of Rafborough whilst on the 1961 edition, the railway continues its course into the western end of the factory complex. No buildings are shown east of the end of the railway *ie* on the old Balloon Factory site.

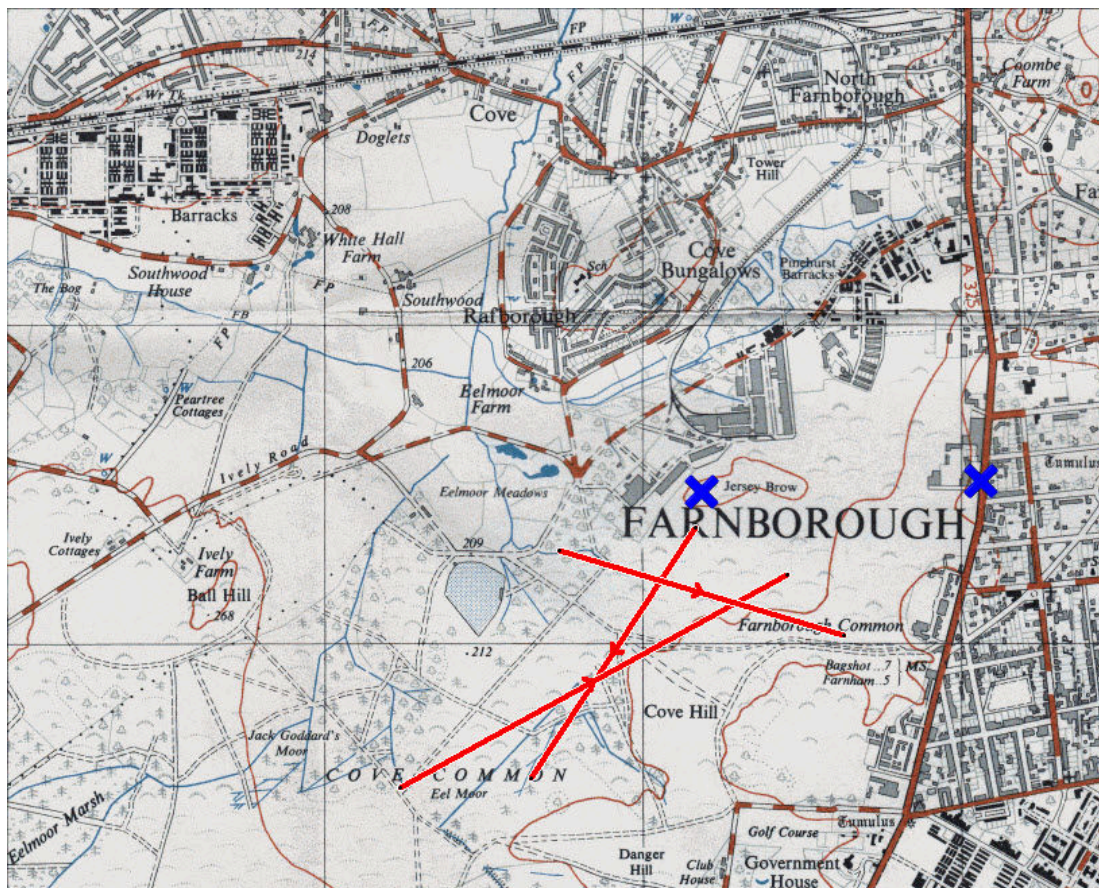
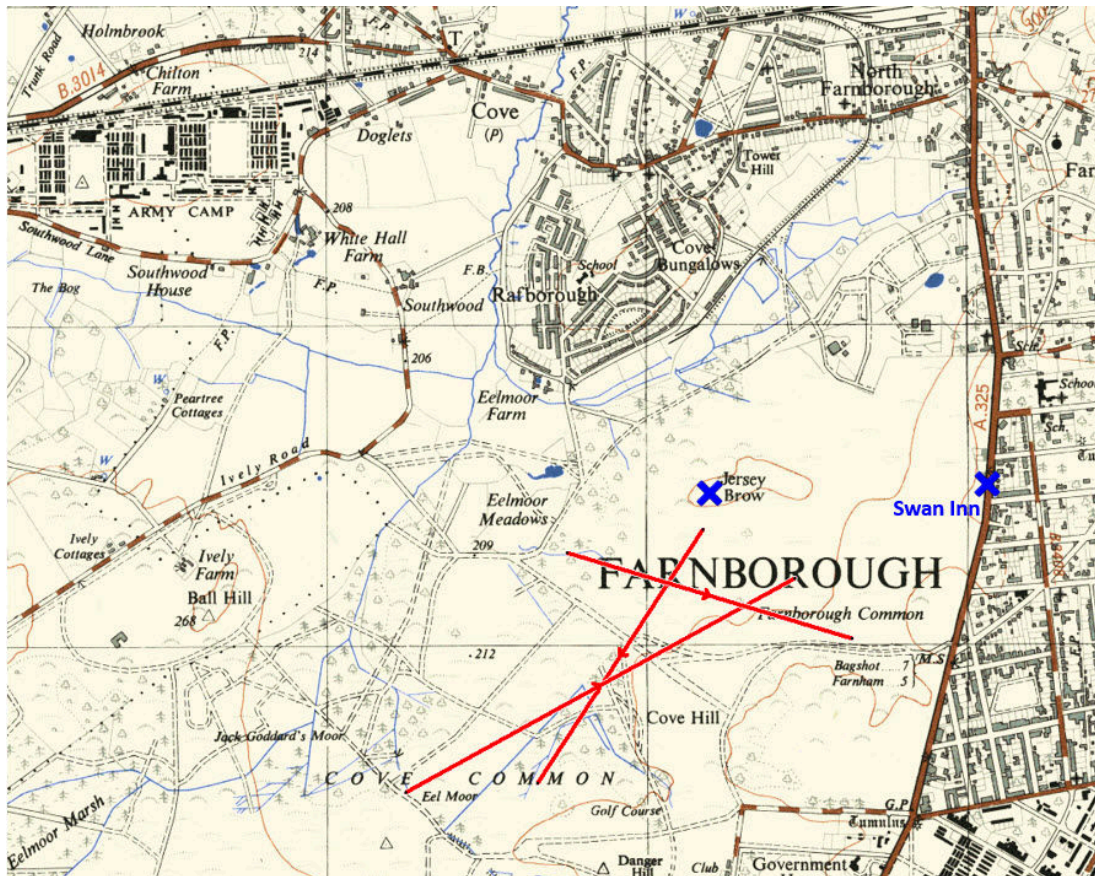


Figure 7 (top): Farnborough airfield and site of RAE as depicted on 1:25,000 sheet 41/85 of 1949 (Revision A). WW2 runways overlain in red (NLS)

Figure 8 (bottom): The map that stimulated this analysis. Site of Farnborough airfield and RAE as depicted on 1:25,000 sheet SU85 of 1961 (Revision B/).

The final imprint of SU 85 (B//* of 1973, *Figure 9*) was uncensored and shows full detail of RAE buildings including those on the Balloon Factory site, east of the surviving (though by now closed) section of railway, and the airfield runways.

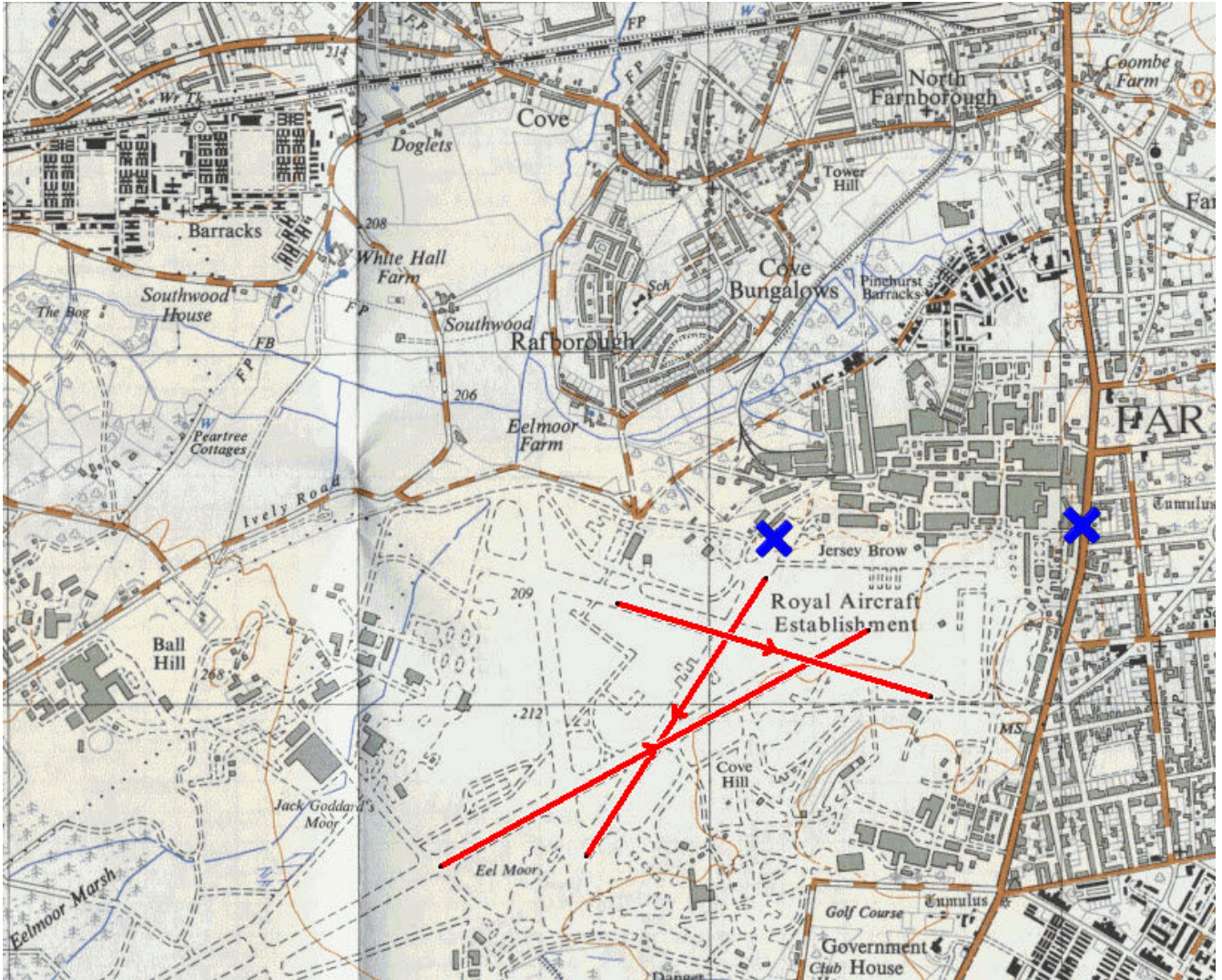


Figure 9: Farnborough airfield and site of RAE as depicted on 1:25,000 sheet SU85 of 1973 (Revision B//)*

One-inch Maps

Perhaps the most interesting history of depiction and censorship (from the cartographical viewpoint) is depicted on one-inch mapping as a result of the more frequent revisions resulting in new editions of the map. I have not managed to find any evidence of aviation activity being mapped at the one-inch scale before the Popular edition of 1920, my copy the Third Series map of 1914 being very similar to the Revised New Series map of 1896. The 1920 Popular sheet 114 "Windsor" appears to be uncensored (*Figure 10*). The "Ryl Aircraft Establishment" is clearly labelled shown as a complex of buildings served by a tramway (mineral lines and tramways symbol) which left the LSWR main line about a quarter of a mile west of Farnborough station (in the goods yard which was not shown). The tramway employed steam locomotives until its closure in 1969. It crossed Union Street, ran southwards along Elm Grove Road and crossed what is now the B3014

(Victoria Road) on the level, then ran south-westwards to enter open countryside on the way to the RAE site where there were several branches. The main line looped through the factory complex then turned northwards on a low embankment to re-join the main tramway avoiding the need for the locomotive to run around its train on a return trip from and back to Farnborough station.



Figure 10: Popular Sheet 114 'Windsor' of 1920 showing RAE, its railway, and flying tracks in detail.

Marked out in a series of solid and pecked lines on the land to the south-west of the RAE (Farnborough Common and Cove Common) were the areas labelled "Speed Track" which was straight and not quite in line with the modern main runway, and "Flying Track" which was kidney-shaped with a branch toward the factory in the north-east. I am left wondering if these labels and pecked lines were indicating features on the ground or the air corridor above the ground? A circular runway doesn't seem to make sense even with the low flying speeds of the 1920s, and the terrain indicated in earlier mapping suggests that landing here would be hazardous, so I'm wondering if this is an unusual (for the OS) and a very early case of virtual reality, i.e. the mapping of an invisible air corridor. The straight "Speed Track" was partially bounded on its eastern side by a watercourse, and on its western side by a track, but I have found no evidence in period aerial photographs for ground features marking out the "Flying Track", though breaks in

water courses west of Cove Reservoir and in the south eastern quadrant of the track might be suggestive of provision of a culvert to remove a hazard to the safe passage of vehicles or aircraft. A water course crossing the “Flying Track” near the eastern corner of Pyestock Wood however was not depicted as culverted, so interpretation is unclear.

I have seen a copy of the next edition of sheet 114 released in 1921 (thanks to Gerry Zierler) and it is unchanged from the 1920 edition, as is the edition of 1923. The 1927 and 1929 editions (*Figure 11*) have some subtle changes.



*Figure 11: Popular Sheet 114 of 1929 (print code 5000/27.6000/29.500/29).
RAE no longer named.*

The RAE label has been deleted and replaced by a new label “Aerodrome”, and “(Wireless Tel Sta)” was added above the large “FARNBOROUGH”. The symbols and labels for the “Flying Track” and the “Speed Track” were retained unaltered. The next edition to be published in 1931 was heavily censored (*Figure 12*). The RAE factory buildings, the street railway from Farnborough station goods yard, Farnborough housing estate, Pinehurst Cottages and Barracks, the flying tracks and the “Wireless Tel Sta” label were all deleted. Only the “Aerodrome” label added to the 1929 edition survived the censorship. Breaks in a small stream running across the site show where deletion of the railway left a witness that something had previously been shown very close to its course. Thanks to Bill Henwood, I have had sight of a copy of the 1932 reprint of sheet 114, which

confirms further censorship as the “Aerodrome” label was also removed and this was perpetuated on the 1933 issue (Figure 13).

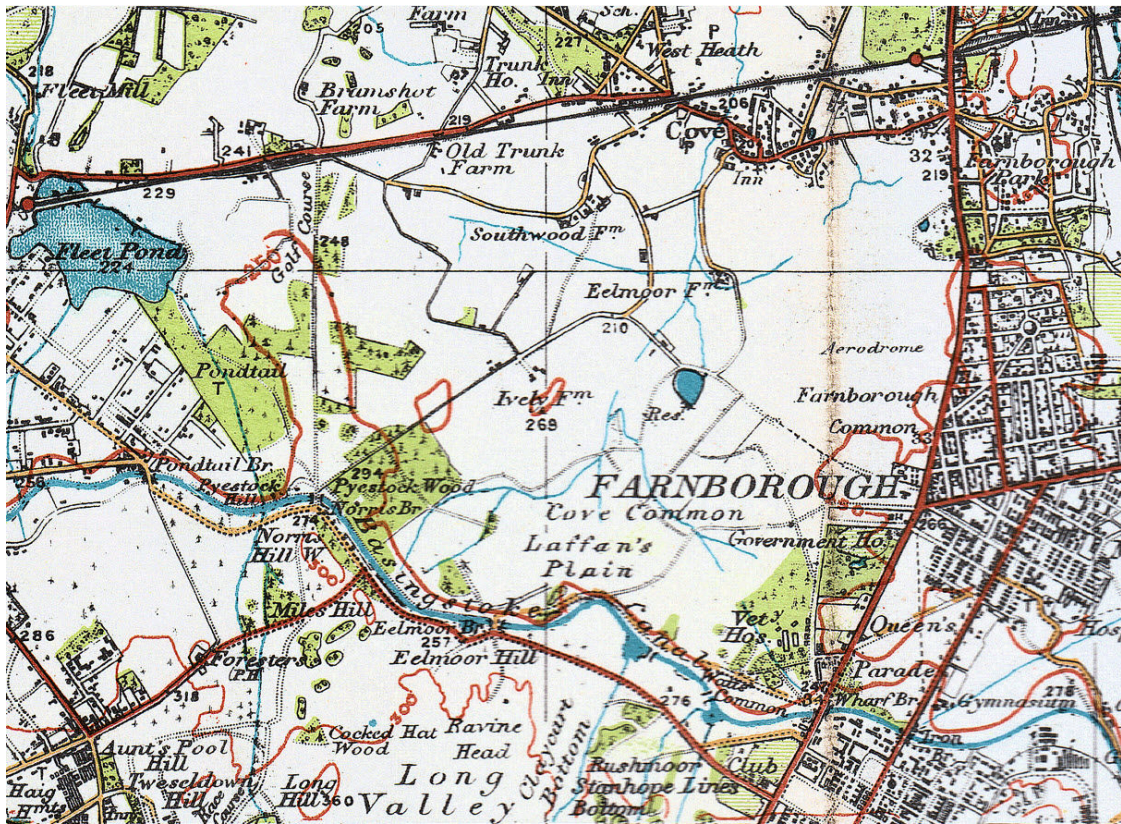


Figure 12 (top): Popular Sheet 114 of 1931 (print code 5000/27.6000/29.6500/31.2500/31).

RAE buildings and railway deleted, but “Aerodrome” label remains.

Figure 13 (bottom): Popular Sheet 114 of 1933 (print code 10,560/33). “Aerodrome” label deleted leaving no trace of RAE on the map.

My copy of the 5th Edition sheet 124 (*Figure 14*), published in 1934 (print code 35 35) was not censored as heavily as its Popular precursor. The housing at RAFborough, Pinehurst Barracks (but oddly not Pinehurst Cottages), the aerodrome label in the same location as on the pre-censorship Popular map, and most of the railway were reinstated, but not the RAE buildings. The railway's return loop northwards was excluded, probably because that section had become disused and had been lifted by then.

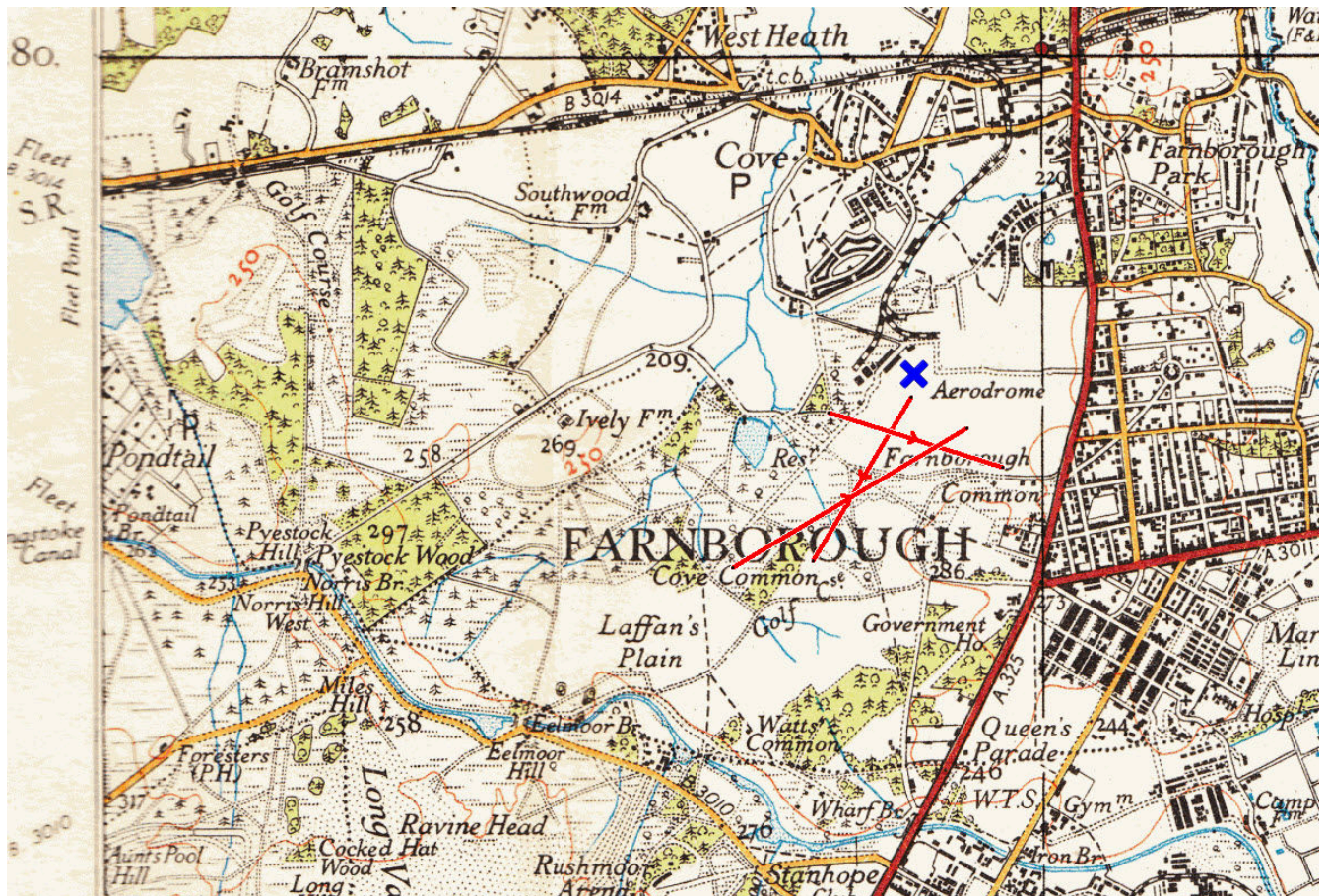


Figure 14: 5th Edition Sheet 124 (print code 35 35), 1934.

The four editions of New Popular sheet 169 (Aldershot) in my collection dating from the original, with publication date of 1940 (but probably not released until 1945), to printing F/, which had magnetic variation updated in 1957, are consistent in excluding the RAE buildings and its airfield. However, the branch railway is shown in a similar way to the 5th Edition map but with slightly less building detail at the southern terminus and reinstatement of Pinehurst Cottages. The “Aerodrome” label was once more deleted. Of the airfield infrastructure, nothing is shown on any New Popular map that I have seen. Information in the form of aerial photographs from the FAST Museum Archive, including one taken by the Luftwaffe, confirm that hard runways were laid down in WW2. The main runway ran from the south-eastern corner of the RAE site, south-west to a point approximately 1000 yards south-east of Ively Farm *ie* somewhat shorter than the current runway. A metalled road running across Laffan’s Plain, to a point just east

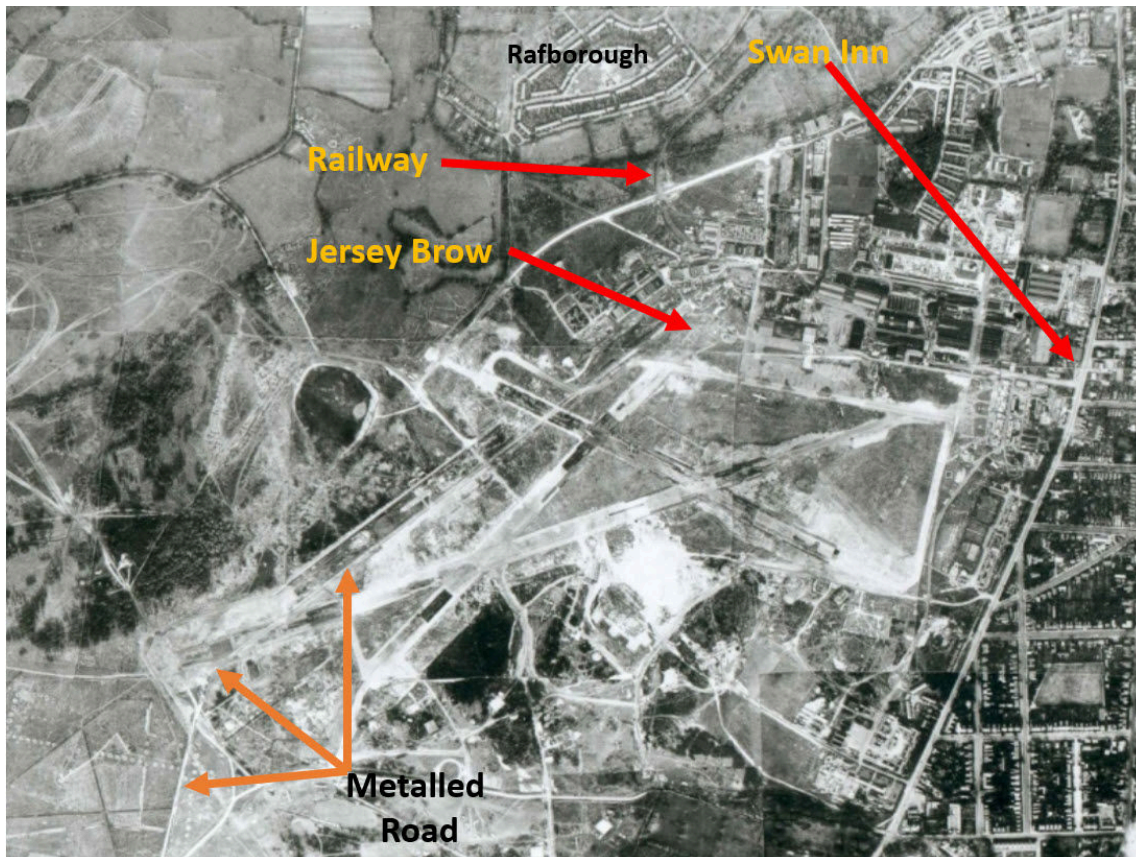
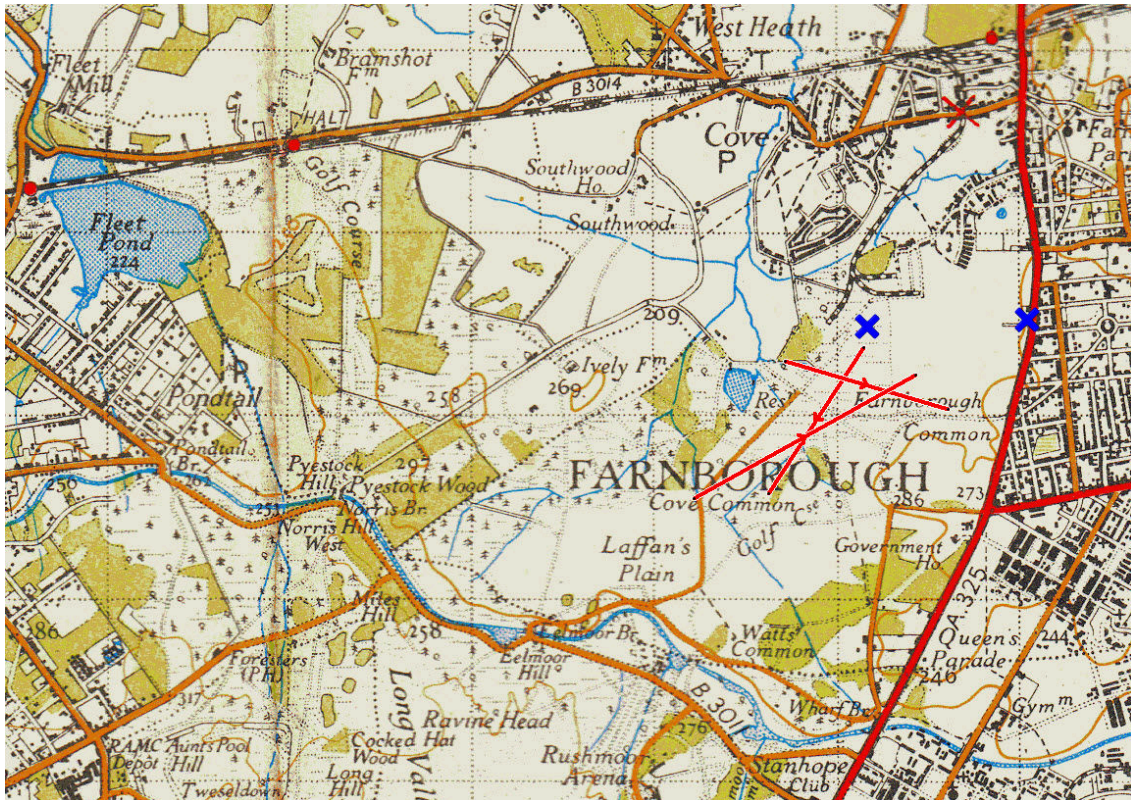


Figure 15 (top): New Popular Sheet 169, Aldershot, first issue of 1940.

WW2 hard runways overlaid in red.

Figure 16 (bottom): 1941 Aerial photo showing the hard runways, possibly under construction, and key locations indicated, including the metalled road shown only on the 1940 New Popular sheet (FAST Archive).

of Cove Reservoir was shown only on the 1940 map (*Figure 15*) and can be seen to cross the southern end of the hard runway on a 1941 aerial photograph (*Figure 16*). The road reverted to depiction as a track marked with pecked lines for the subsequent printings of the New Popular series (*Figure 17*).

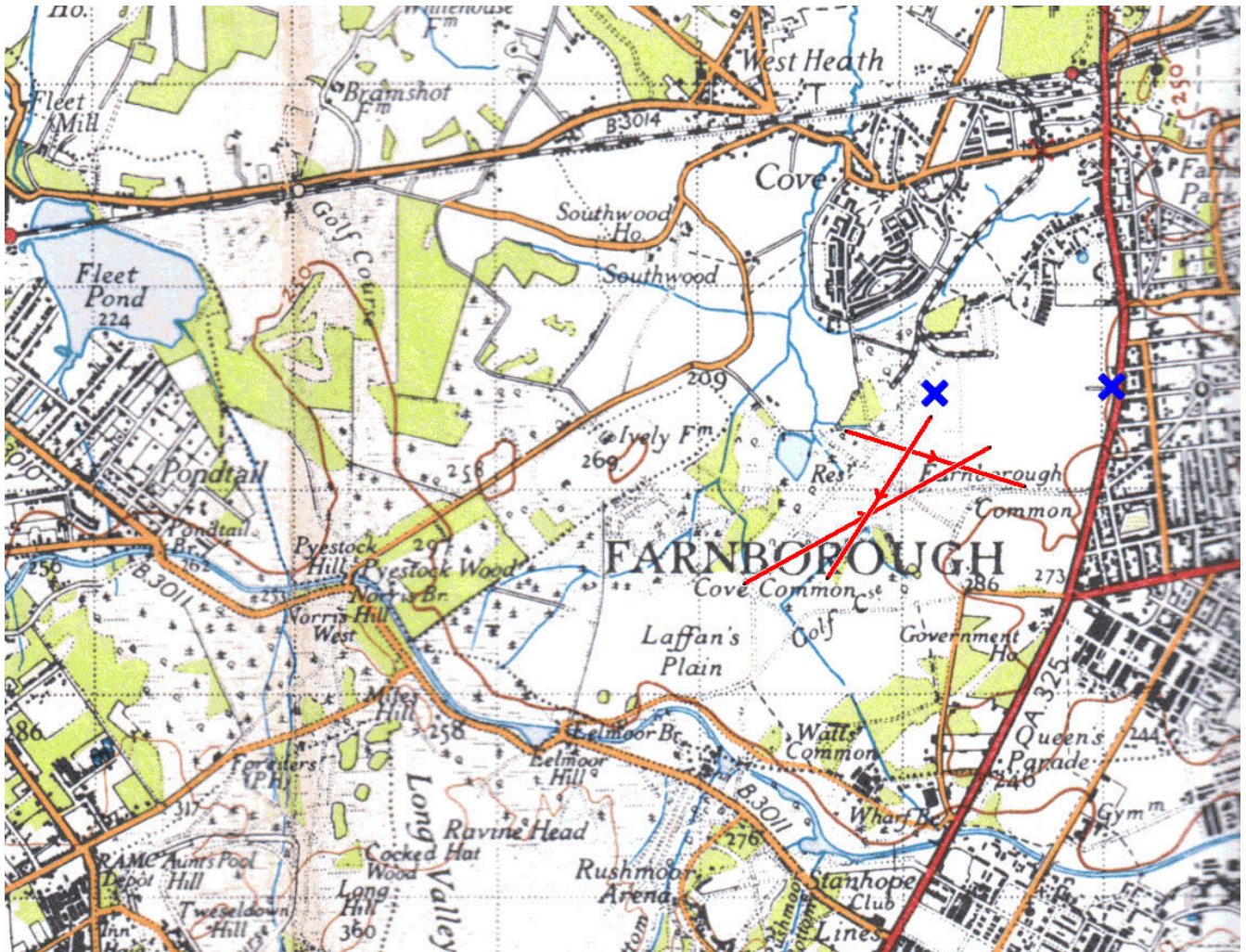


Figure 17: New Popular Sheet 169 (Revision F/) of 1957. WW2 hard runways overlaid in red.

A complex of small buildings to the south-east of Ively Farm was added to the 1949 and subsequent editions. These buildings would have been quite close to the main runway. The short lived Bramshot Halt serving the golf course to the south of the Southern Railway's main line was shown as open on the editions of 1940 and 1949 (1151) but as closed on the 1952 (F) and 1957 (F/) editions. The halt's closure c1946 is reputed to have followed an incident when a number of workmen employed building the nearby Southwood army camp were hit by a train and killed as they crossed the line.

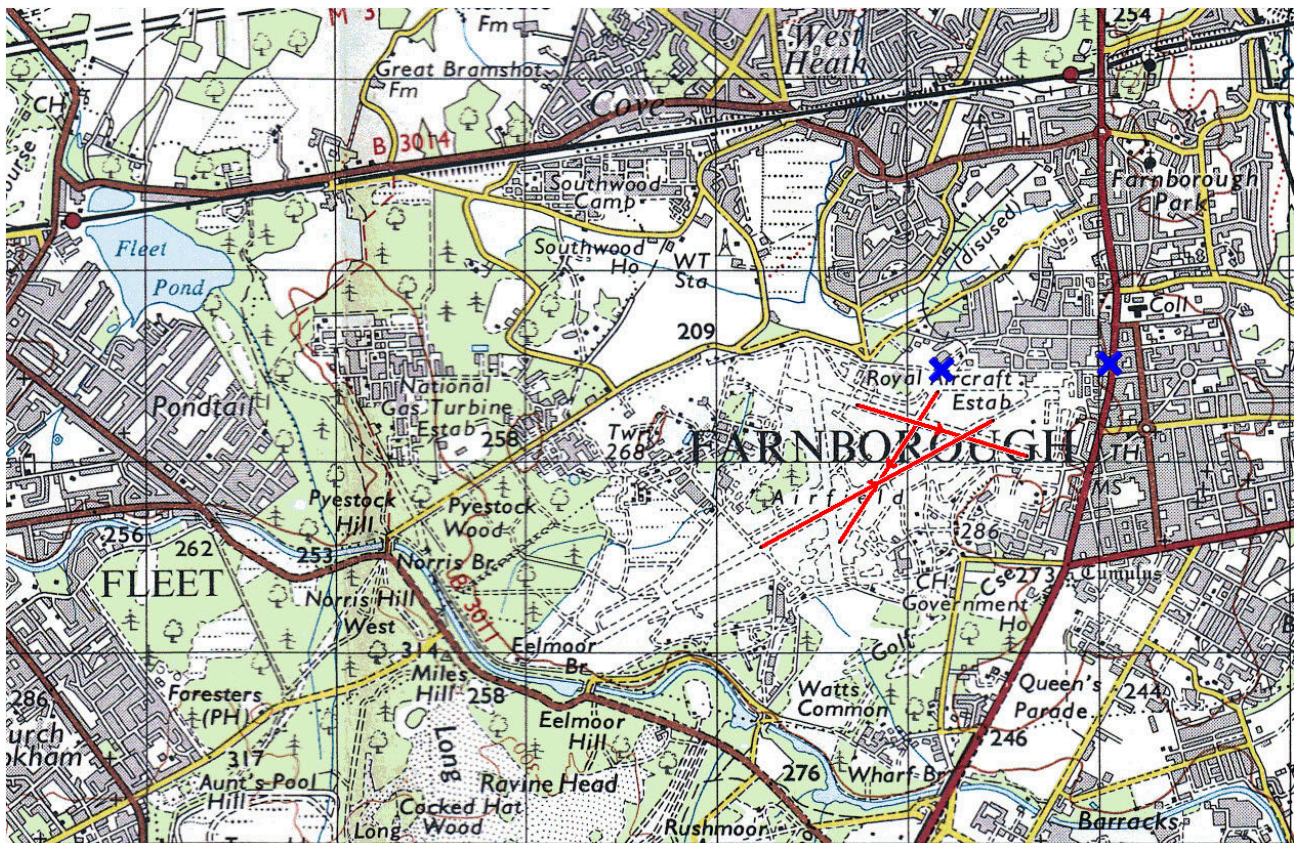
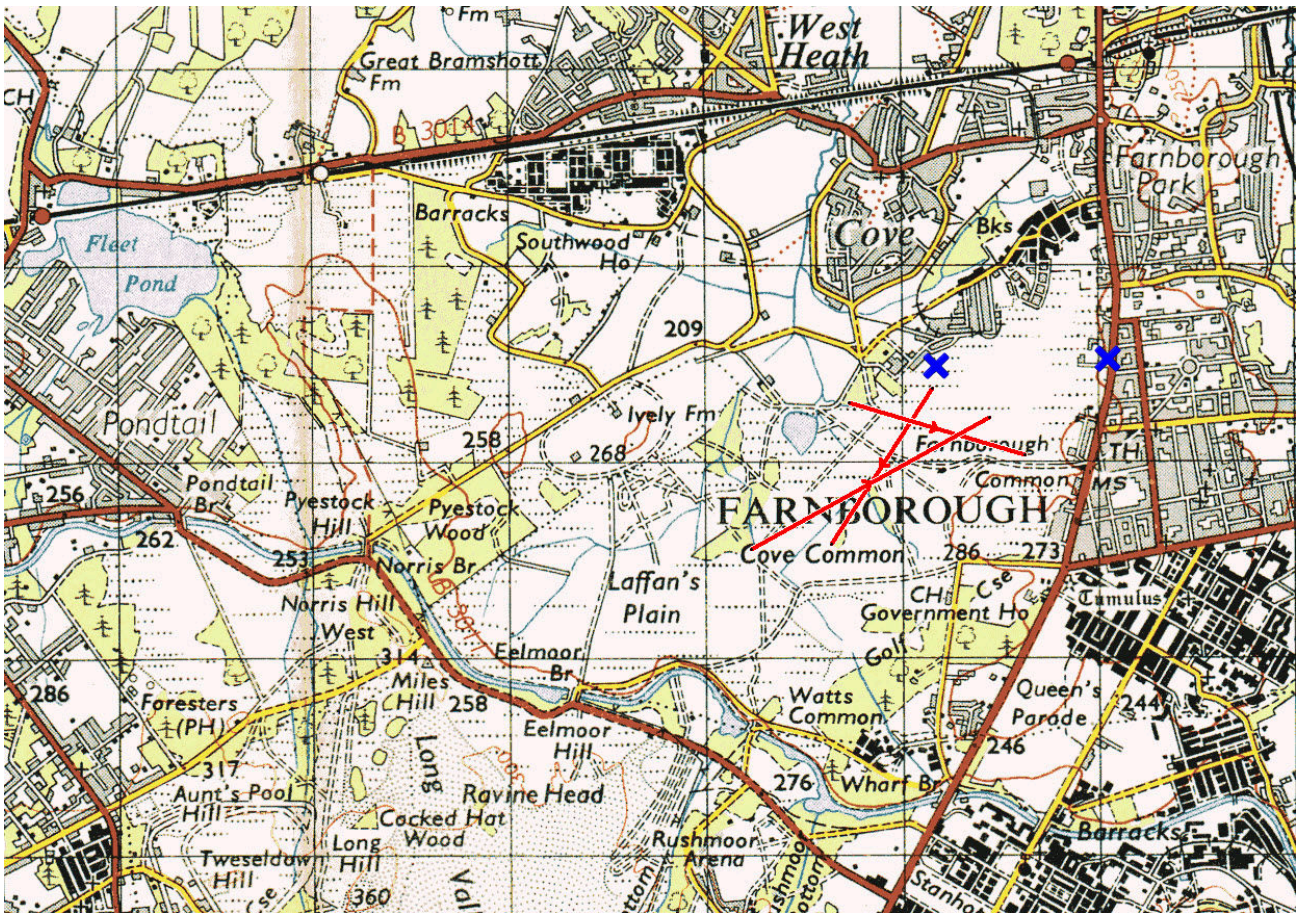


Figure 18 (top): 7th Series (Revision A/*) of 1965. WW2 hard runways overlaid in red, RAE buildings partially shown.

Figure 19 (bottom): 7th Series, 1971 (Revision B). WW2 hard runways overlaid in red. Post-war extensions to the runways and airport infrastructure are clear to see. The full extent of the RAE buildings and NGTE are shown.

Seventh Series maps in my collection with Revision codes A to B//* (1960 to 1965) show evidence of partial censorship (*Figure 18*). The RAE buildings at the end of the now simplified branch railway were shown but no features of the airfield were shown at all. Policy changed for the edition released in 1971 Revision B (*Figure 19*), which shows full detail of the runways, a much-expanded RAE including buildings on the former Balloon Factory site and, for the first time, significant development on the site of Ively Farm which ultimately became the Cody Technology Park. Also shown is The National Gas Turbine Establishment (NGTE) across the minor road to the west. The section of the branch railway south of the Victoria Road level crossing which closed in 1969 was still depicted with the “Mineral lines, sidings and tramway” symbol but labelled as “Disused”.

1:50,000 and Landranger Maps

The First Series 1:50,000 maps in my collection date from 1974 (A) to 1978 (A//**) and all show essentially the same level of detail with the Airfield, RAE and NGTE shown and clearly labelled. The branch railway remained, labelled as “Disused” in the earlier maps, but by 1978 the route was shown as a path (but not with public right of way). My *Landranger* maps from 1984 (A//**) and 1997 (B4) continued to record the development of the RAE area with the open ground to the north, crossed by the railway, being built upon. The former trackbed is now Invincible Road, named after the last steam locomotive to work on the line. On the 1984 map NGTE and RAE remain clearly identified but the 1997 edition omitted the NGTE label, and the RAE label was modified to show the new nomenclature of Defence Research Agency. RAE was renamed Royal Aerospace Agency in 1988, renamed Defence Research Agency after merging with other research organisations in 1991, then renamed again to Defence Evaluation and Research Agency (DERA) in 1995. Current mapping might suggest the reintroduction of censorship as there is a lot of white space on the site of NGTE, however this reflects the fact that the site closed in 2000, and most of the buildings were subsequently demolished with just the concrete bases remaining as seen on Google Earth aerial photographs. The NGTE site is currently being redeveloped for housing as Hartland Village. The RAE buildings fared no better. Following part privatisation of DERA in 2001, various parts of the site became commercialised as Farnborough Airport, QinetiQ, and the FAST Museum heritage site. The only parts to remain in Government hands were the Air Accidents Investigation Branch and the Defence Science and Technology Branch. The latter organisation later moved out of Farnborough leaving many parts of the site available for demolition and redevelopment as a business park, hotels, and housing, rendering any future security deletions unlikely.

My thanks to Rob Wheeler for Figure 9, and to Graham Rood for sanctioning the use of images from the FAST Archive.

Lows and highs of coastal OS mapping

John Cole

It starts with a phone call from Tidal Section OSHQ: "Sorry, we have no photography for Mean Low Water at Brixham. You will have to use ground survey methods."

To say I was despondent puts it mildly. Fishcombe Cove to the Berry Head Hotel would have been do-able, even if time-consuming and difficult. But from Durl Head to St Mary's Bay on the south side, difficult if not plain dangerous. However, at the back of my mind was an instruction that if the photography for the 1:1250 upgrade of the town (originally 1:2500 reformed mapping of 1950) was shown below mean low water it could be machine-plotted as a contour. Better still, mean high water (some of that difficult) could be treated the same way. The result was excellent. To my astonishment a comparison with the most difficult area west of Durl Head showed exact agreement not only with the 1950 (almost certainly the 1904 original) Mean Low Water but also the National Grid position as well in two instances. A coincidence perhaps, but a pretty extraordinary one given the nebulousness of low tide lines.

Tidal survey for me had commenced in 1965 when I moved from Berkshire to Cornwall. "No problem", I was told. Low tide is taken from infra-red photography plotted on six-inch to the mile mapping kept as a databank at HQ. All very fine except that the first encounter was a survey for HM Land Registry near Mevagissey. Relatively simple on three sides of the property – a detached house – but the fourth was in fact a sheer drop from cliff top to a small bay. The date of the existing available mapping (as per most of Cornwall at that time) was 1906. It looked all right but I was nonplussed over how to check the cliff line, though there appeared no erosion, let alone the tide lines. Possibly I mentioned this in a report to HMLR which must have sufficed as there was no comeback.

The next meaningful task was 1:2500 revision around Truro which included a section of tidal river and a creek. The channel at low water had indeed been plotted at HQ, but unfortunately not the stream in the tidal creek mudflats onto which I sank (up to thighs) at one point. But I could not resist carrying out a check on the main channel and was told off for doing any such thing (especially when I said it didn't seem right).

My first dose of coastline was the western end of Newquay in 1967. This comprised the extensive sand beaches of Crantock, Fistral, and the main town beach, plus intermediate cliff and rock features. Air survey had been extensively employed to revise the previous 1933 revision but there were indications that the latest had been somewhat rushed, this leading to some head-scratching and indeed argument about detail concerning both land and coast.

An unexpected interlude followed Newquay in that I was dispatched to Plymouth for a few months – the only time I was engaged on OS work in my home town, where due to a miscalculation in 1950 the outskirts as well as the adjoining Cornish towns of Saltash and Torpoint were resurveyed at 1:2500 scale.

Urban growth necessitated upgrading to 1:1250. In the event the former didn't materialise due to HQ plotting problems, but I managed one map at the overgrown village of Plymstock. The area was well known to me from schooldays' railway and bus interests, as it was the terminus of a closed branch line (albeit a very short one) and for Plymouth's longest bus route. The midpoint of the map was a picturesque tidal creek which had partly been reclaimed as a recreation area. The eastern edge of the map had been completed together with a wide low water channel. But to the north the narrowed channel passes the remains of the railway swing bridge with narrow strips of sand and shingle, and although the map edge had been completed, the channel had not been shown. I was subsequently assured that the detail appeared somewhere on a trace (which I never saw) – highly irregular to my bureaucratic mindset, but the detail eventually appeared on the published map (which I have).

Returning to St Austell for more than a ten year period, I engaged in various spells of coastal work; mainly 1:2500 revision but a small area of 1:1250 at Carlyon Bay where high and low water had been plotted at HQ. Shortly after they continued with the 1:2500 Mean Low Water, resulting in a join-up failure at Crinnis Beach (though not particularly serious).

I followed this with Par Docks and beach as well as Fowey and Polruan. At some point HQ stated that their job would be made easier if the clifftop could be revised in advance of their tidal plotting. This we did for Pendower to Dodman Point, and possibly the earlier lengthy section I attended to from Polperro to Downderry west (excluding Hannafore and East Looe but including Looe Island, where I was able to plot MHW and MLW on the same suitable day).

How reliable were these tide lines? Well, one of the first things I looked at after retirement in 1994 were suitable locations to check the published map, and a very convenient area was my main swimming location at Carne beach and nearby Paradoe Cove. From the tide tables the mean heights were worked out and suitable predicted times. The first was HQ plotted for MLW and this checked by pacing from a section of beach wall on differing dates. Over a distance of 160 metres on flat sands this turned out to be correct to under five – quite a surprise. At Paradoe again MLW was HQ plotted whilst I had 'surveyed' the difficult MHW line by the contact print method. The check was simply a comparison of shapes but again unexpectedly realistic from Pennarin Point to Mallett's Cove, either side of Paradoe.

I had discovered to my surprise that in the contracted-out 1:1250 of Penzance-Newlyn, either the surveyors or OS validators had simply enlarged the MLW on the previous 1:2500 revision even though (bar a small section at Newlyn surveyed on the ground in 1980) it was dated 1957. Whether this was because of lack of photo cover as in Brixham I do not know. But checks between Newlyn harbour and Battery Rocks indicated no great problem.

Another check which inspired confidence was one side of Mevagissey Harbour – largely an inspection of HQ plotted rock shapes at MLW. Mistakes (or alterations) were noted at Par Beach, where a sand ridge – possibly artificial – had moved MHW one hundred metres seaward. At Malpas, MLW at the junctions

of the Truro and Tresillian Rivers on the north side was an uncorrected mistake dating from 1966 when I originally revised this map. As previously mentioned, I was ordered not to check the HQ work.

On another 'enhanced' map I looked at in 2004 (a mixture of 1:2500 and 1:1250 accuracy) the tidal channel of the River Camel at Wadebridge appeared more generalised than it should have been in an area of saltings.

To conclude with a high – in fact MHW – an incident in the summer of 1971 on three kilometres between Millandreath beach near East Looe, and Downterry west. The suitable tidal dates were all at weekends and I volunteered to undertake this on Saturday and Sunday mornings. The cliff top (mainly earthen slopes) was unsuitable for viewpoints but the foreshore was walkable throughout, being flat rock with a small sandy beach at the midpoint. Taking the maps under revision plus the photo contact prints to draw the tideline I used the allotted time to survey the tideline, and in ideal weather spent the rest of the afternoon on the sandy beach, or swimming. A far cry from my previous OS days surveying polluted canals in the industrial West Midlands!

Brian Baily's 14-page article in Sheetlines 90 (April 2011), together with Richard Oliver's follow up in Sheetlines 91 – and his earlier and very apt 'Taking to the Water' in Sheetlines 45 - sets the scene.



*Nice work if you can get it : watching the tide at Millandreath.
(Andrew Darling)*

Letters : On Manoeuvres

Donald Clayton writes: David Archer's comments about Manoeuvre Maps in *Sheetlines* 122 brought to mind that I have a copy of the half-inch Manoeuvre Map 1910, Western sheet, owned by the Brigade Major of the 2nd Cavalry Brigade, Canterbury, dated 28 June 1910. The Major is un-named but the initials 'DAL' are overdrawn – but this may be a later owner.

The map 'References' indicate Training Gallops and Prohibited Areas within the boundary of the manoeuvre area. What form of prohibited areas? Naturally some private estates, such as Wilton House and estate of the Pembrokes, and also 'Vespasian's Camp' west of Amesbury - an Iron Age fort improved and landscaped by the Queensberry family in the 1740s. Another prohibited area is the Fargo Plantation, a long wood which crosses the west end of the Stonehenge Cursus.

Perhaps some private areas or woods are shielding game birds, or even foxes, and thus must be avoided. Perhaps some of the Army personnel are local owners!

One important aspect in 1910 is that it seems to be the first time that aircraft were used for observation by the warring Armies. The flying operations were reported by Harry Harper of the Daily Mail.

Early days in the operations were very wet and windy, but on September 21, Captain Bertram Dickson, flying a Bristol Boxkite from the Bristol School at Larkhill was able to find the Blue Army between Salisbury and Amesbury, and was thus able to provide details to the Army Command HQ – at breakfast! As a result the General was able to modify the Red Army plan. Later Captain Dickson flew again and landed to find a telephone to report – but landed in 'Blue' country and was apprehended by a Corporal of the North Somerset Light Yeomanry and thus captured – but was allowed to escape and was later able to talk to the Home Secretary, Winston Churchill.¹ In the next few flights Dickson was able to use a Morse-key transmitter to report and did not have to land to report.

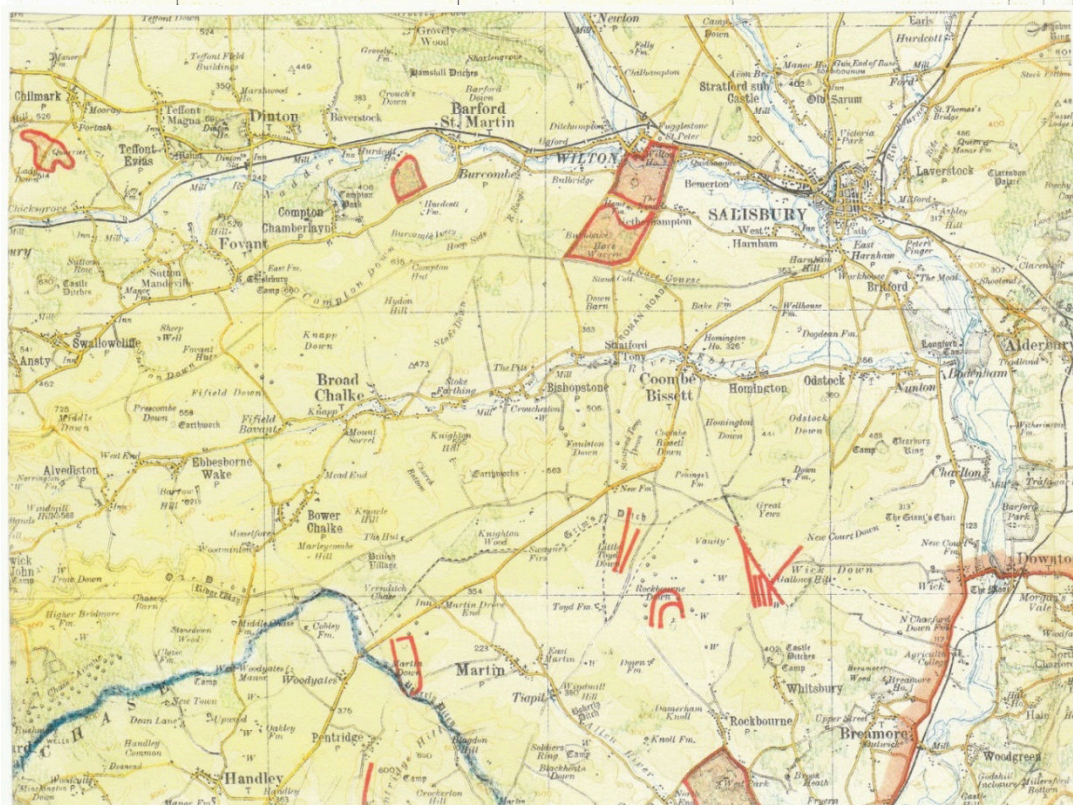
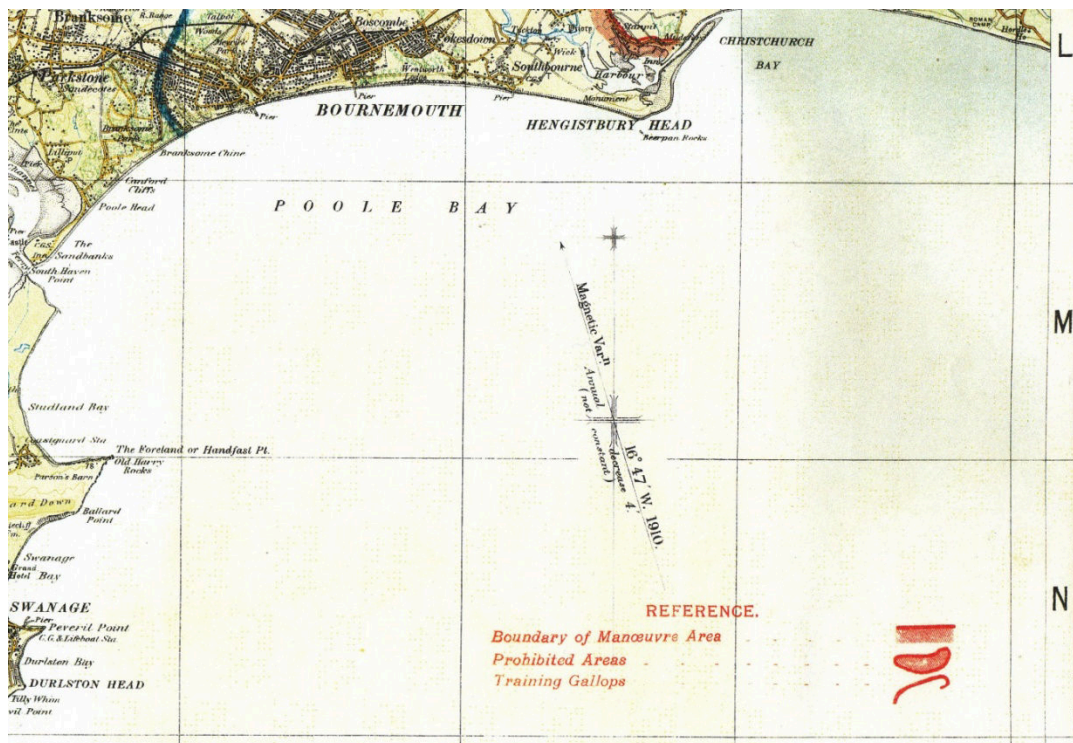


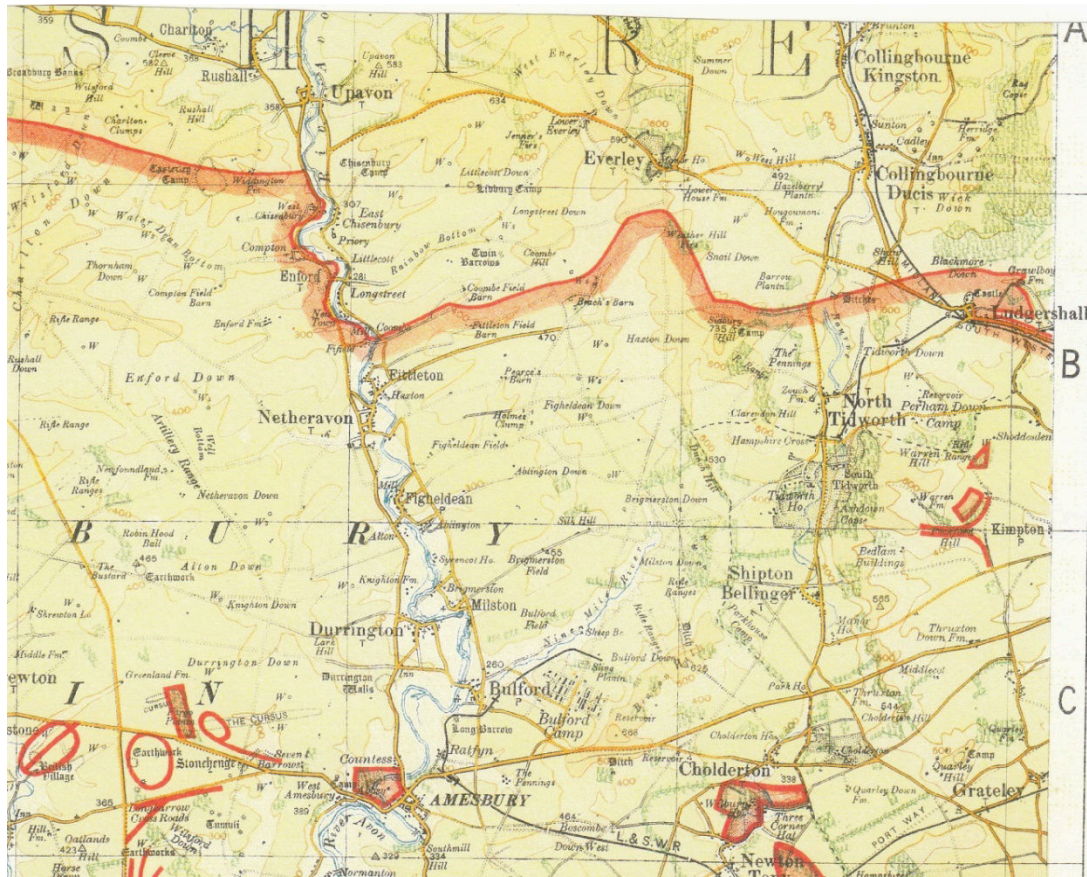
A Bristol Boxkite above Stonehenge (RAF Museum)

¹ Harold Penrose, *British Aviation, the Pioneering Years*, 1967, p241.

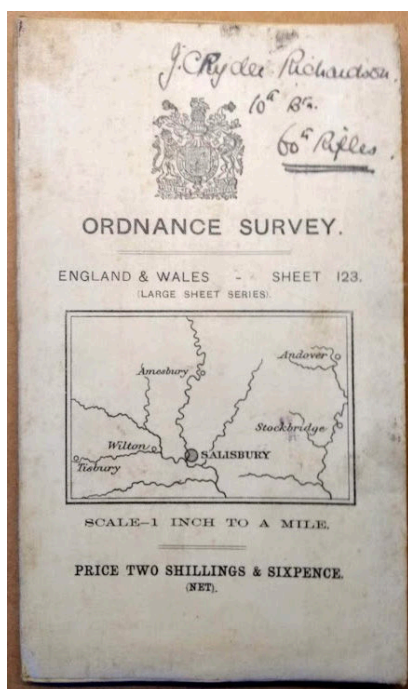
So these 1910 manoeuvres opened up the possibility of new modes of military operations, but I am not sure the military leaders were pleased at the aerial operations intervening in their horse-bound views; but they learned the lesson four or five years later in the Great War.

The base at Larkhill had not yet evolved to the present large size, but the Bristol School sheds are still there today.





John Millard writes: David Archer in his *Musings* for December 2021 raised an interesting point concerning second-hand maps and their history before they come into the possession of other people. He suggests that some maps will have specific usage and appropriate designation which is easily identifiable; but what about those of a more general nature when some cover information could provide a clue?



I bought this map when a student. David's article has prompted me to look a little further at this Third Edition Sheet 123 of Salisbury and Stonehenge which would seem to have been last revised in 1912 and carries on the front: JC Ryder Richardson 10th Btn 60th Rifles.

I decided to start with the Army connection and possible association with WW1 and links to major training areas on Salisbury Plain. I also assumed the copperplate writing could hint at officer status. Research from a number of books on Army history informed me that the 60th Rifles had its origin in 1757. The Regiment was raised in Pennsylvania with permission of George II, as a foreign Protestant force for service in the Americas. This Royal American Regiment was restyled as the Kings Royal Rifle Corps in 1830 and through a number of subsequent

amalgamations firstly emerged as the 2nd Green Jackets in 1958, the Royal Green Jackets in 1966 and most recently as the Rifles. The Royal Green Jackets Regimental Museum at Winchester seemed the next logical step to see if there was any trace of JC Ryder Richardson.

Major J Gray, the Archivist, and the volunteer Archivist Blair Southerden, were quick to respond to my enquiry but initially could find no reference to the gentleman in their archives. As all good researchers they were not to be deterred and using a variety of resources readily available on line, were able to put together a fascinating history of Ryder Richardson. The web sources used included the University of London Roll of War Service published 1921, Ancestry.co.uk, Medical Directory and the KRR Corps Chronicles. It transpired JC followed his father into medicine and was commissioned as a temporary Second Lieutenant from the University of London Officer Training Corps in October 1914. The 10th Btn was created as a response to Kitchener's 'call to arms'. There are notes relating to training at various locations on Salisbury Plain including April 1915 at Hamilton Camp, Stonehenge and the Battalion landed in France in 1915. JC's specific role entailed being Medical Commandant of the many volunteer nursing staff facing the challenging task of dealing with the massive numbers of casualties following action on the Western Front. His service record is held at the National Archives, Kew; and pension records suggests he was invalided from the Army in 1918, which suggests he may well have on occasion been very close to action in the trenches.

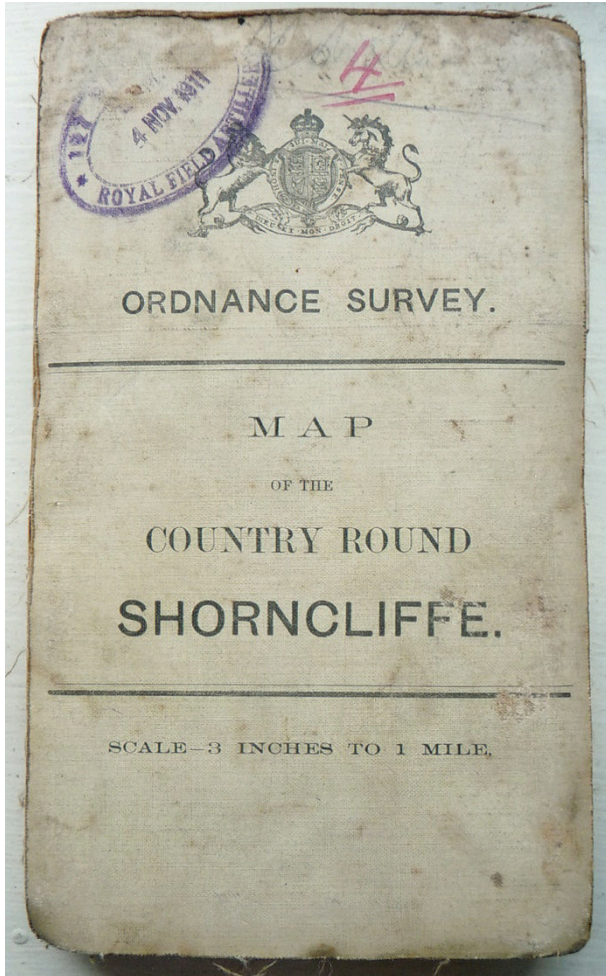
This is not the end of the story because in 1922, he was married and by then a fully qualified doctor having become an MRCS in 1919 and winning the Obstetrics prize for the London Hospital in 1918. In the inter-war period up to 1939, references appear for him being a GP near Aylesbury in Buckinghamshire. John Charles Ryder Richardson died in London in 1962.

I feel privileged to have this map in my possession knowing more about its provenance. However, two interesting questions remain unanswered; firstly, did this map go with him from Salisbury Plain to the Front in 1915? Secondly, how did it end up in the bookseller/binder in Bath, which led to me purchasing it, probably on the strength of the details on the front cover? Incidentally, a descendant of JC fronts a very popular series of TV programmes.



Right: J C Ryder Richardson

Geoff Kent writes: This map was issued to a friend's great uncle, who later died in the First World War, and has remained in the family ever since.



The general purpose cover measures seven-and-a-quarter by four-and-a-quarter inches, and is stamped 'Royal Field Artillery' and dated '4 Nov 1911'. The stamp, though incomplete, also has the number '127 ... something': BATTERY, perhaps. The map proper is headed 'Map of the Country Round Shorncliffe, showing the area available for manoeuvring.' It covers Dover, Folkestone and Hythe, and shows, outlined in red, separate manoeuvring areas allocated to the Shorncliffe and Dover Garrisons. WD property is in solid pink: Shorncliffe Camp itself is an area of around a square mile between Folkestone and Hythe. 'Ground forbidden to Troops' within the manoeuvring areas is coloured a solid blue-green.

The real interest for me is the scale: three inches to the mile. The map is subscribed 'Reduced from the Six Inch Scale Map and Heliozincographed at the Ordnance Survey Office, Southampton,

May 1911.' As you may imagine, this results in some of the smaller wording (names of houses, farms, etc) being very hard to read without a glass, which must have been something of a disadvantage in use, especially at night or in poor light. Presumably, though, the map was intended for use at all times and in all weathers.

In sixty years of collecting I've only come across two other maps reduced to this scale. Both are footpath maps of roughly the same era: one is of the North Wirral published for the Wirral Footpaths and Open Spaces Preservation Society, Liverpool, in 1903, and the other (undated) is of South Warwickshire and North Worcestershire, published by the local branch of the Ramblers Association. Both acknowledge the source of the obviously six-inch scale OS mapping, but neither is in OS covers.

Obviously, therefore, the phenomenon isn't unknown, but how widespread was the production of such reduced-scale maps, particularly by the OS in its own name?

Reviews

Historical maps of Alnwick and Alnmouth from earliest times to 1918, scale 1:2500. Historic Towns Trust & Alnwick Civic Society, 2021, ISBN 978-1-8380719-0-5, £9.99

The project to produce atlases of historic towns in Europe started in 1955, and work for England and Wales began in the early 1960s. Progress in Britain has been slow compared with some other countries, not least Ireland: to date we have seven atlases and eleven maps. The basic formula in Britain is to use a late nineteenth or earlier twentieth century OS 1:2500 as a source for the base-map, and to show surviving and vanished buildings. The concept seems straightforward, but in practice a good deal of research is necessary for the finer details, particularly those that disappeared before the advent of OS large-scale survey. The complexity of such places as Oxford means that they can monopolise an atlas volume; other atlas volumes have gathered several towns in one cover. The drawbacks of the multi-town format are that purchasers interested in one particular town must buy others willy-nilly – and so often sales are lost – a volume can only be published when work on all the constituent towns is complete, and that the format is completely unsuited to perambulation on the ground. When the Historic Towns project was started the Godfrey Edition, of old OS mapping reproduced in handy sheet form, was far in the future, but it is hard not to feel its influence. Publication in sheet-map form maximises sales opportunities; the main drawback is the limited space available for supporting material. Indeed, maximum use is made of surfaces: there is an introductory historical essay inside the cover. Whilst the compact form of the Godfreys means that their double-siding is not a problem, the map under review is the same size as the standard OS 1:50,000 *Landranger*, 1000 × 890 mm, and the gazetteer is on the back, as is an extract from a manuscript map of Alnwick town and castle of 1760. The map of Alnmouth is also on the back, but at least its users don't have to reverse the map to refer to the gazetteer.

The inevitable problems with double-siding apart, this is a most distinguished production. The cartography is by Giles Darkes, who was formerly at Oxford Brookes University, and is a model of clarity. The basis is the OS 1:2500 revised in 1918: a particularly interesting and transient feature is cover of most of the World War I army camp and convalescent hospital in the North Demesne park. Former river courses also appear. The one apparent blemish is that the Bondgate wagonway offered in the legend seems not to be on the map. Or am I missing something?

This is strongly commended even if, like me, you don't anticipate visiting Alnwick for a while yet.

Richard Oliver

Newcastle upon Tyne: Mapping the City, Michael Barker, Brian Robson & Anthony Champion, Birlinn, 2021, 256pp, ISBN 9781780277264, £30 hardback.

When I learned that Newcastle was the subject of the fifth volume in this splendid series, I had wondered whether its maps were sufficiently numerous and interesting to fill such a volume. I need not have worried: there are a good number of really fine maps well worth showing. Besides, the authors have expanded the scope of the volume to Tyneside more generally, with a consequent increase in the number of relevant maps.

The classic approach for books of this type, as followed for example by Daniel MacCannell in covering Oxford, is to present a series of maps in chronological sequence. The background to each map is presented, and it is used to explain how the

place in question had changed since the previous map. In contrast, this volume is structured as a history of Newcastle illustrated with extracts from old maps. The problem with this approach is that the authors rarely engage properly with their maps. For example, although Thomas Oliver's superb map of 1830 dominates one of the chapters, we are presented with an extract of the central portion of the 1830 map, an extract covering much the same area of an 1833 update of a 'smaller version' (scale not stated), a MS proposal of 1834 for new development, and an extract of a coarser (lithographed?) 1849 plan. Later on, an 1859 version appears with proposals for rebuilding after the 'Great Fire'. Were these maps updated by adding merely the big changes like railways, or were there thorough revisions? We are not told, although we may note that Oliver's depiction of the fire-devastated area differs from that by his rival Dobson, each conveniently implying that their respective improvements would only affect devastated areas so would not occasion demolition of standing property.

This failure to engage with sources adversely affects the quality of the history. Thus van Keulen's chart of 1730 is used to argue that there had been no improvements to the Tyne since Collins' *Coasting Pilot* of 1693. Indeed, the soundings on Keulen's chart are unchanged. In fact, they are *exactly* the same. Clearly van Keulen has copied Collins and his chart cannot be used as evidence for the state of the river in 1730.

To take a more modern example, an extract of the 1:10,000 *Objektkarte* for Newcastle produced by the German General Staff about 1940 is described as a *Luftwaffe* Bombing Target Map. Enough has surely been written about the *Objektkarten* to leave no excuse for this old chestnut:¹ they were a *Mil-Geo* product intended for use by occupying troops. The authors sneer at the inclusion of the North Shields Workhouse as a 'strategic target': it is actually marked with the symbol for a *hospital*.

Any history of Tyneside must inevitably address its importance as the source of London's coal supply and the ways in which a cartel was maintained to keep prices high and ensure the greatest possible profit for local interests. The authors do indeed have a lot to say about the monopoly power of the Hostmen who controlled the keels that conveyed coal from staithes to the colliers moored mid-river. Such a monopoly would be broken as soon as docks were created which allowed colliers to be loaded directly. Was the Northumberland Dock the first such instance? It is mentioned several times but this aspect is never addressed, although we know that by the nineteenth century it was the coal-owners who controlled the cartel.

It might be objected that the authors had limited space. I would observe that they found space for topics like the Jarrow March, the Blaydon Races, and Newcastle United Football Club with rather exiguous cartographic links. Perhaps these were seen as helping to sell the book. It must indeed be conceded that the publishers have presented a large and interesting array of maps in a book of very reasonable price. I would commend it as a suitable Christmas present for anyone with links to the area and with cartographic interests. But it could have been better.

Rob Wheeler

¹ *Sheetlines* 68 p28 for a start.

Kerry musings

David Archer

Regular readers will know that when it comes to finding Ordnance Survey maps I have always had more pleasure from the chase than owning the maps found. Especially when the chase involved more than tepidly trailing round book shops or fairs and just looking at what was on offer. For example, I might be told of some unusual OS maps in an obscure public collection; that a shop had paid the OS to produce a map publicising their business; or a government department had commissioned a special OS production. On hearing a snippet of promising information excitement kicked in, and the hunt was on.

A similar thing dogged me as a student: I would be reading a journal article and just had to follow up interesting footnotes. Half-way through an article, I would note a reference and head off to the journals section to look it up. And so often this would also have a seemingly must-read reference or two. If the original piece referred to a monograph, I would hot-foot it to the card catalogue in the library, and whilst flicking through would come across a totally unconnected but interesting sounding title, not even my subject, and was off again. My educational reading was very much like watching a pin-ball machine being played.

These days, on-line library catalogues, especially university catalogues, are increasingly showing thumbnail pictures of a book cover beside the item. And sometimes an image of a map. Some have arrows either side, so that one can move backwards or forwards through the sequence. A great time-waster if ever I saw one. But brilliant.

Catalogues, bibliographies, cartobibliographies, lists, they all demand my attention and usually give pleasure. Why? Because almost any good list will contain something, interesting, unusual or rare. And just seeing such an item listed, confirmation of its existence, can have a tingle factor, whether one decides to seek out the item or not.

So, what tingle factor items am I talking about?

A very short while before the society came into existence, I received a few catalogues from Alan Godfrey. In those days Alan sold used OS maps and had not started his reprints. For a novice collector, these really were gripping reading, with listings of unknown map series and generally exciting stuff. The most memorable was an illustration of the Old Sarum cover. Truly wonderful times. And then came the Ordnance Survey catalogues issued by John Coombes, peaking with the 94-page Catalogue 84. I can remember it arriving a few days before an AGM at Birkbeck, and the person sitting next to me mentioned that he had only worked his way through half of it so far. We then has a discussion on catalogue tactics. Do you ring up once you have marked a few items you want, and risk letting someone find something a little further on whilst you are telephoning, or do you go through the whole lot and make one call, leaving the line free for competitors in the meantime? My tactic was always to phone as soon as I saw something essential, and was prepared to make more calls if necessary. But I digress.

After we started selling maps, I became more acquainted with auction catalogues. Before moving to Wales, I received catalogues of old woodworking tools from Christies, South Kensington. These were my main interest, rather than OS maps, even though I could not afford to buy anything from Christies. A great advantage was that one could go and not only see the things at a viewing, but also handle and discuss them with others viewing the lots. Just like CCS members, the woodworking tool fraternity were very open in sharing information. Similarly, with book and map auctions, one can usually handle the lots offered; a tremendous advantage, and recommended to anyone learning about a subject.

To find the overlooked wonders, one has to study any list carefully, and in 1995 one lot at Y Gelli Auctions in Hay-on-Wye, caught my eye:

23 White (Capt. T.P.) AN ALBUM OF ORIGINAL DRAWINGS. Ca 1866-1876. Topographical/Archaeological drawings in pen & ink, pen & wash and pencil. Initialed with White's monogram. One or two removed from album – possibly for publication. Orig. morocco gt. Rubbed & sl. scuffed. A.e.g. 4to.

ARCHAEOLOGICAL SKETCHES IN SCOTLAND. KINTYRE/KNAPDALE. 1873;1875.

2 vols. Fo. Litho plts, maps & ills. White's copies, the first signed on t.p. Cont. half-calf gt a little stained at head of spine; Orig. cloth gt. (3) £150-250.

Nothing in the description to suggest any OS connection, but the name sounded familiar, and a quick check brought to hand a 1975 reprint of his 1886 work *The Ordnance Survey of the United Kingdom*. So, off we went to the viewing. My memory is that the book was indeed a sketch book, but that the sketches were 'slight' and not full bodied. Skeletal might be the word to describe them. Not a must have item in itself. I cannot recall anything that associated the sketches with the Ordnance Survey apart from the artist, and could not challenge the final bid of £270 plus commission.

Only later, did I come across: Henry James' *Notes on the parallel roads of Lochaber, with illustrative maps and sketches from the Ordnance Survey of Scotland*, 1874 with sketches by T. P. White. Indeed, White's work is praised in the text: "The appearance of these beaches in the landscape will be illustrated by the sketches, principally from the master hand of Captain White, R.E., who had charge of the "hill-sketching" branch of the survey of this part of Scotland." Were the missing sketches used in the above volumes?

Although auction catalogues were fun, the internet is now offering lists of all sorts. Indeed, I see websites as just a list of pages, sometimes harbouring great things. And for those who have not investigated the Charles Close Society website, perhaps I can give you a flavour?

Ordnance Survey catalogues are fascinating and essential for anyone compiling an OS related list. But how many were there and where can one consult them? *Catalogue of the maps and plans and other publications of the Ordnance Survey of England and Wales, to 31st December 1862*. Colonel Sir Henry James, RE, FRS, Director. Southampton. This is the first entry in Roger

Hellyer's 53-page list of such things on the society website.¹ Sounds good, but the line above is the one that causes the tingle: Catalogues published in octavo format, with red paper covers. I have never seen any of the twenty that are listed with red covers; only the dull buff covers introduced in November 1882. Surely, to own a red covered catalogue is worth at least an arm or leg? A couple of fingers just to see one?

Or again, we are all familiar with the small booklets known as OS Descriptions, but who else fancies a copy of *O.S. 404. Character of writing for Ordnance Survey plans*, November, 1881, which appears to be the start of this series? All are listed on the society's website.²

Given the chance to own anything listed on the CCS website, it would be the books and paperwork that would be at the top of my list. Having said that, it will not appear strange when I say that perhaps the site's finest section is the 'Digital image collection'. After all, maps are our main concern.³

If so many rare maps were assembled in one place for viewing one's concentration would rapidly decline, leaving most unappreciated. But at home, we can work through them a few at a time. Just click on the green heading and the scan will open up. Hold down the cursor, drag the area viewed about, and zoom in to see more detail, but do not start looking at this if you have to go out in ten minutes.

Many images are the only ones recorded, which hopefully will encourage someone to look for others. Importantly, and most usefully, each map has a description of why it is in the collection. A few extracts from such descriptions :

Image 15 – War Revision sheet 74 is thus recorded in this unique copy.

Image 21 – two copies in private collections are the only ones so far recorded.

Image 39 – Possibly the earliest attempt of the Ordnance Survey to

publish a one-inch map in colour, Two copies of each sheet only are recorded.

Consider Image 24, a one-inch map headed Plymouth from 1914, in a scruffy condition, having been previously folded and unfolded many times, with light stains and darkness along the folds. Typical of many maps offered for sale at the rear of folded maps in a battered old cardboard box. And so often, such maps are not inspected by map collectors. Surely, anyone looking at this map will, at the very least, think it unusual. A sheet numbered 144, implying part of a standard series, contoured, but with the addition of hachures and hill shading. Even to those who are aware of the Aldershot sheets in the same style, hachures and hill shading on a sheet 144 will seem strange. Forty years ago, the 1913 'Killarney District' in the same style, was the holy grail amongst collectors, but I am sure that there are other sheets in this style yet to be discovered, just as this sheet was previously unrecorded. Similarly image 87.

The Ordnance Survey, when experimenting with new styles, has often sent

1 [https://www.charlesclosesociety.org/ Ordnance Survey/Bibliographies and catalogues/Catalogues](https://www.charlesclosesociety.org/Ordnance%20Survey/Bibliographies%20and%20catalogues/Catalogues).

2 [https://www.charlesclosesociety.org/ Ordnance Survey/Bibliographies and catalogues/Descriptions](https://www.charlesclosesociety.org/Ordnance%20Survey/Bibliographies%20and%20catalogues/Descriptions).

3 [https://www.charlesclosesociety.org/ Online resources/Maps/Rare maps](https://www.charlesclosesociety.org/Online%20resources/Maps/Rare%20maps).

copies of its current thinking out for consultation. Print codes 4001 and 4002 in the Seventh Series are always on a wants list, yet only exist as flat sheets, which were circulated mostly to individuals, institutions and official bodies for comment. Similarly, when the same series was to be replaced, four maps showing suggested alternatives were distributed in minimalist glossy white covers. All are out there to be found, and anyone who studies the maps, and more particularly, the descriptions in this CCS collection, must soon develop a feeling for what might be an unusual map, and if they open sardish folded maps, could well find a gem, if not a whole treasure.

And when you have worked your way through the 'Digital image collection', just click on the link for the Charles Close Society Archives, where hours can be spent, with something for everyone. I already have a list of things to look at when I next visit Cambridge.

However, the most intriguing reference I know from any list is from the *Catalogue of the Royal Engineers Corps Library, at the Horse Guards, Whitehall, London*. 1913. On page 293, under the subject heading 'Surveying' is the following entry : MILITARY SURVEY OF ENGLAND. Major-Gen. W. Roy. Original MS. N.D. Sounds interesting?



One-inch (1:63,360) map of England and Wales, sheet 144 Plymouth, 1914