Virtual Meetings 2
The archaeological revision of the Isles of Scilly, 1978 3
Norman Quinell

C-ing things in Kielder Forest 19
John Davies

Early Military Map Surveyors of the Board of Ordnance 20
Rose Mitchell
Emma Down

A minor mapping mystery: the Evan Water Aqueduct (and some other unusual bridges) 27
Stephen J G Hall

Mapping the Ocean Gateway 37
Jack Kirby

Burton-on-Trent Borough 1878 – boundary markers 44
Lez Watson

Riddles of the Sands 50
Andrew Darling

How low can you get? 56

Letter: 'Mystery airfields map' 58
Andrew S Cook

Ordnance Survey covers and titles update 59
Derek Deadman

Kerry Musings 60
David Archer

Reservoir quiz solution and solvers 63

Bus Stations quiz 64
2020 has turned into a year like no other, with the onset of the world-wide coronavirus pandemic. As with every organisation and family, the Society had no option but to cancel its programme of events. The AGM, originally scheduled to take place in Lincoln in May, has been replaced by a virtual event on 8 August, full details of which are in documents included with this issue of Sheetlines. Please read these and return proxy voting forms in good time.

The programme of visits has been suspended until further notice and members’ meetings have been replaced by on-line sessions, as described on page 2. To ensure that you are kept fully advised of activities and developments, please check that you are included in the CCS News email distribution list (ie that the mailing label of this issue of Sheetlines does not have the words ‘No Email’ – if it does, please contact the membership secretary). You can also keep informed by visiting the Society website and Facebook page.

An interesting item about the work of Ordnance Survey during lockdown was recently broadcast on Radio 4 ‘Inside Science’ and can be heard on BBC Sounds at https://www.bbc.co.uk/programmes/m000jn9x.

With the prospect of a summer holiday this year very much in question, members might instead enjoy a virtual visit through the following pages to a popular destination. The Isles of Scilly contain more than two hundred scheduled monuments - one of the densest concentrations of archaeological remains in the country. In 1978, a team of OS surveyors was dispatched to the islands to carry out a re-survey. The team leader’s account provides a fascinating insight into this important aspect of OS activities. Meanwhile, the manner in which more recent historical artefacts have been shown on OS publications is discussed in our article on the boundary stones of Burton-Upon-Trent. Elsewhere, David Archer muses on the importance of house names, we track down some more Lows of Britain, and give some consideration to the Riddle of the Sands.

### Independent Examination of Accounts

Peter Ennor has expressed his willingness to serve as Independent Examiner for the present year (2020-21) but this will be his 5th year and he wishes to retire from the role thereafter. Suggestions for a successor ought ideally to come from the membership at large rather than the committee: after all, the role of the independent examiner is to ensure on their behalf that the accounts presented by the committee are a fair statement of the position, as well as such other duties as are required by the Charity Commission. Members who are willing to take on this important role (or to propose someone for it) are invited to contact the Chairman or the Hon Sec to discuss the matter.
Virtual meetings

The unwelcome arrival of Covid-19 and the consequent cancellation of the planned members' meetings in the first half of 2020 led to the investigation and adoption of innovative alternative ways of sharing knowledge and interests and, perhaps more crucially, providing contact and interaction in the era of self-isolation and lockdown.

First to experiment with hosting an online session was David Watt, who had arranged a show-and-tell at Redbourn in March. David cancelled the live meeting and became a pioneer; he set up an experimental virtual meeting, using the soon-to-be-ubiquitous Zoom software and inviting a few of the intended Redbourn participants, with the topic ‘my home town’. The experience gained from this led to subsequent invitation-only sessions in early May.

By then the principles and procedures were sufficiently well understood to organise the first members’ on-line meeting. This was advertised in CCS News and was hosted by Ian Byrne on 19 May (above).

Nine members joined in to show and talk about maps of their local area. Most participants were already familiar with Zoom meetings for family and business purposes and the meeting proceeded smoothly and was judged a success; a poor substitute for meeting in person, perhaps, but in the circumstances an acceptable alternative and a further meeting was arranged for 16 June on ‘a British island’.

Virtual meetings are easy to set up and are fun to participate in, and members are encouraged to host or take part so as to maintain contact in these troubled times, until we can again resume our normal activities.

If you would like to host a meeting, please contact the chairman; if you would like to take part, ensure that you are signed up for CCS News emails.
Prior to 1978 the whole of the Isles of Scilly had been published by the Ordnance Survey at the scale of 1:2500 (25 inches to 1 mile). The initial surveys of the 1880s had last been revised in 1906, apart from a little in 1958. In 1978 the OS decided that even if the main islands were to be revised at 1:2500, only the areas of Hugh Town and Old Town would be so published; everything else would be at 1:10,000 as the largest scale.

The Scillonian project would necessitate a field section of a half dozen surveyors who, with air photo assistance, would update all field boundaries, houses, roads, paths and other features, applying the normal OS descriptions as required. The archaeology would be dealt with by an Archaeology Branch section, although by 1978 there were some within the OS hierarchy who considered archaeology an anachronism and unnecessary expense. The South West section (me, John Barton and Nick Attrill) would break off from the archaeological survey of Dartmoor which had been under way for two months and go to Scilly.

At the end of January I was called in to the OS Regional Office in Bristol. Their sole responsibility to us was to supply stores such as stationery and tapes and to pay our expenses (other than salaries). For all other control, movements and other decisions about fieldwork, we came under Archaeology Branch at Southampton. Bristol informed me that they had calculated there were fewer than fifty archaeological sites on Scilly and we could deal with them in less than three weeks. Therefore we would not be included in the office accommodation that would be found for the other field surveyors, who would be on Scilly for about six months. Furthermore expenses would be paid for residing on St Mary’s but not on other islands. Their basis for the fifty sites was looking at the old two-and-a-half inch map; there had been no consultation with Archaeology Branch which had done the primary recording and prepared all the material to be sent to us. The estimates were ludicrous and to be allowed only to reside on St Mary’s would clearly limit the working day on other islands.

At Archaeology Branch, Southampton, Arthur Clarke was in charge of all the Field Sections of the country. He rightly decided that since the OS would never undertake another survey of Scilly, all our surveys would be based on the obsolescent 1:2500 plans for archive purposes and re-penned at a reduced scale on the 1:10,000 maps supplied to the other surveyors. These were specially prepared air photo transcriptions.

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1 A brief biography of Norman Quinnell (28 May 1925-13 April 2008) will be found as an end-note to this article (which has been abridged with the permission of the Cornish Archaeological Society and Henrietta Quinnell from a paper written by Quinnell and published post-mortem in Cornish Archaeology, vol 48-9, 2009-10, 227-41).
**Starting work**

On Tuesday 14 February we arrived at Penzance and collected the boxes of maps and records, compiled by the Archaeology Branch Recording section, which awaited us at the Post Office. A scan of this material that evening revealed that nearly three hundred sites had been recorded for investigation. We boarded the Scillonian on 15 February with our minimal equipment and met the other half-dozen surveyors who had already loaded their office furniture, including tables, chairs and filing cabinets. Their office was to be a disused flat in part of the Secondary School on St Mary’s; their residential accommodation had been arranged close to the School. We had found ours in advance, a hotel somewhat inconveniently a mile and a half from Hugh Town, a temporary expedient.

Clearly our stay would be protracted. We would need to be in Hugh Town for boats, and for cheaper accommodation since the OS would only pay hotel rates for a very limited period; thereafter it was a ‘lodging allowance’. Our arrival was greeted with a few days of bad weather. It allowed time to plan our own campaign of investigation but highlighted the need for an ‘office’ of our own to work from, and in, especially during the evenings since normal working hours would not apply.

A meeting with the Island’s Executive Officer was surprisingly fruitful. Explaining the position that Archaeology field staff were deemed ‘quick moving’ by the OS, and not entitled to office accommodation, I pointed out that, unlike
the Field Surveyors' flat that was presumably rented by the OS, there would be no payment for any room which might be offered to us, but that anything would be most welcome. We were told to return the following day when something would be arranged. Thus we were given a room in the Secondary School. Normally used for music practice, the room was large with a view over Porth Mellon beach. Initially empty, the school caretaker allowed us to rummage in a basement for disused tables, chairs, and even two desk lamps. So by 20 February we had our ‘office’ with keys that allowed access out of school hours. I have always been grateful for the understanding and assistance afforded by the authorities.

All OS staff on Scilly had agreed that to return home at weekends was pointless. There was not enough time and the cost would be prohibitive. Generally there would be continuous working for three or four weeks and then ten or twelve days away, of which two would be travelling days. Nick Attrill lived near Plymouth, John Barton near Winchester while I was near Highbridge, Somerset. With personal preferences, a system developed whereby absences became staggered so that usually two would be working while one was away.

Within a month we had found long-term bed and breakfast accommodation in different parts of Hugh Town and had established a routine. We met at the office at 8am. If working on St Mary’s we would collect the day’s work and get the bus to the nearest point. If working on the off islands, we would write up notes of the previous day before joining the boat queues at 10 – 10.30am. We returned to the office at about 4.30pm and, apart from a meal break between 6.30 and 7.30pm, remained there until 9.30pm, writing reports and penning surveys. The OS had issued a deadline of 31 July when all staff would leave, so, to complete our work, a 12-hour day seemed imperative, though, of course, there was no recompense for the extra hours.

During February and March field work was confined to St Mary’s. There was poor weather and cancellations and irregularities to the inter-island boat services would result in time lost. Wet weather afforded the opportunity for further research at the Museum and its library. While the Archaeology Branch had a fine library of national journals and books it did not extend to many localised or rare ones. (It had always been the policy of the South West Section to research in museums and libraries when facilities and time allowed). Books were borrowed from the island library and that of the Museum, while the latter’s accessions were also recorded. As a result, more than one hundred additional items were noted for investigation, apart from further information on some previously recorded. Perhaps the most rewarding source was Troutbeck’s *Survey of the ancient and present state of the Scilly Islands* (1794), with its wealth of detail on Civil War fortifications.

Archaeology Branch numbered sites consecutively within the relevant OS six-inch (or subsequent 1:10,000) sheet, but a single number could relate to an isolated cairn, for example, or a group of thirty. The latter case would necessitate sub-letters to accompany individual grid references. For each site the research at headquarters (or in the field) was written as brief but fairly comprehensive notes on specially designed forms. To these the field investigator added his report and,
perhaps, photographs. When a large number of sites had been completed, the forms were returned to Archaeology Branch where the reports were edited and typed onto index cards. Surveys for publication were given a descriptive name and passed to the draftsmen of the map production department. Other large-scale surveys, made for archive purposes, were retained by Archaeology Branch. Some sites would go into the record but not be published, particularly those of destroyed monuments and the findspots of artefacts.

Survey equipment was the normal individual issue of a drawing board on which to tape or pin survey plans, tape measures, an optical square and a camera. Usually one carried a few one-metre bamboo canes to use as markers. For the section as a whole there was one plane table and tripod with non-telescopic legs. This was guaranteed to cause problems when being carried on and off crowded boats and therefore infrequently used. With a haversack containing survey items, a notebook, a file comprising all recorded information and perhaps air photographs, lunch and drink, one was well loaded.

![Figure 1: an OS ‘495’ record card with a survey by Norman Quinnell of one of a number of entrance graves and cairns on the eastern slope of South Hill, Samson, surveyed in June 1978.](image)

(PRN 7081.03) (© Crown copyright. Reproduced courtesy of the National Monument Record)

It was evident that the off islands required priority treatment. From the time of landing to that of collection on the last return boat there would only be a

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2 The Record Card (also called a ‘495’ because of its OS form number) would go into the archaeology index, with a copy being sent to the relevant county Sites and Monuments Register. Additional cards in the Archaeology Branch might include site photographs and large-scale plans produced during field work.
maximum of five hours available for field work, and that would usually include an hour of walking. Then there was the matter of bracken which starts early in the year and grows rapidly to an alarming height, particularly on the uninhabited islands. Most days there were services to Tresco, St Agnes and St Martin’s, but Samson, Tean, St Helen’s and to some extent Bryher were dependent upon tides and the economics of demand – not enough passengers, no trip. For the lesser islands, Annet, Northwethel and others, we would need to hire a boat ourselves and, since those locations necessitated jumping off the boat, good calm seas were required. Work on St Mary’s was relegated to times when boat services were cancelled and when weather was dull and misty; also, as daylight hours lengthened, field work could be extended into the evenings.

Each surveyor was allotted a complete island, if small, or an area of a large one, with perhaps ten sites to investigate and survey. This could represent a few days’ work, since a single site number might consist of twenty or more cairns or five hundred metres of fortification. The surveys would be on the relevant 1:2500 plans but, considering the time factors, if the surveyor deemed it appropriate for archaeological records, he was free to do additional itemised surveys at a much larger scale; for example, 1:100 or 1:250. Once the initial area was completed, an adjacent one was taken up. The penning of surveys and the reports were undertaken in the evenings or on wet days. Rarely did two persons work together (with the difficulties of survey), and mostly they were on different islands. Everyone had a log book for the details of each day’s work. This would include the island, boat fare, and the number of the site or sites surveyed or the kilometre square in which they fell. The time devoted to evening penning would also be noted, simply for the record as there was no overtime payment.

As i/c section my duties were wider, with responsibility for all administration. A monthly account of section and individual expenses had to be presented to Bristol Regional Office, as had any request for replacement stores. Completed work was invoiced and despatched to Archaeology Branch, who also required a quarterly statement on progress backed by statistics. One task (termed ‘finalling’ by the OS) was to visit and check a percentage of the surveys done by my colleagues and read all field reports, to ensure that they were comprehensive and incorporated information towards a two- or three-word ‘correct’ description, upon which the publication terminology would be based. The above occupied more than half of my time, and the rest was taken up with my share of field work, surveys, reports and penning.

Work progressed smoothly, punctuated by the occasional visit by others who were involved with Scilly. Paul Ashbee had just finished the excavations on Halangy Down (1996); Vivien Russell had almost completed the Isles of Scilly Survey (1980), a parochial check-list, while Professor Charles Thomas was active in excavation and research. In May, Cyril Wardale (i/c Field Sections) of Archaeology Branch, spent a week with us to familiarise himself with our problems.

The difficulty of getting to the small islands was overcome by hiring the Nature Conservancy’s small boat and warden. Annet and Rosewear were covered
on a calm day and, weeks later, the Eastern Isles of Menawethan, Little Ganilly and Great Ganinick. On successive days in June the skipper of the boat bound for St Martin's was persuaded to divert to Great Ganilly with Nornour, and then Great and Little Arthur; in each case the surveyor jumped onto a suitable shore rock and was collected by the last boat back to St Mary's. Jumping onto the boat, with equipment, was far more stressful than jumping off, in case one fell on the passengers.

**Details of islands**

**Annet** and **Rosevear** were visited in April before sea bird nesting was advanced. Rosevear was barely within the OS archaeological remit, being a handful of ruined nineteenth-century structures associated with the construction of the Bishop Rock lighthouse. However it was an opportunity to revise the 1906 surveys and report on the remains. Annet had a few small but significant prehistoric remains that hitherto had been unmapped if not entirely unrecorded. Among the Eastern Isles, Little Ganilly showed nothing of archaeological interest although it is 200m across. The rest had from one to fourteen sites, some additional to those previously recorded.

Of the many monuments previously unsurveyed, the most prevalent were prehistoric field systems, sometimes represented by turf-covered banks, at others by lines of stones: ‘boulder walls’. Occasionally, as on Great Ganinick, or on Puffin Island, there was simply a short length of one wall. Such features were difficult to detect when under bracken and their survey became a problem in some areas. John Barton dealt with the fields on St Helen’s when the bracken was under one metre high, but on Samson Attrill and I had a battle to finish surveying the systems as the bracken rose to shoulder height. On Tresco, St Agnes and Bryher conditions were better, but on St Martin’s, which was left rather late in the programme, some areas of field systems were, regretfully, never surveyed. As evidence of inundation, field walls occur below the high water mark on the east side of Samson, of Bryher, and around the southern end of Tresco. Those visible were surveyed at low tide but it was clear that some would, in time be covered by sand and others exposed, so those published are not necessarily apparent today.

**Samson** (with **White Island** and **Puffin Island**) Nick Attrill did the surveys on North Hill, and endeavoured to distinguish and describe the numerous cairns on the ridge, but we worked together on South Hill. Here the OS had previously surveyed and published almost all the ruined houses and fields of the seventeenth- to nineteenth-century occupation but not the underlying and intermixed prehistoric houses and fields. The survey of these was made difficult not just by bracken but by the frighteningly aggressive nature of the black-backed gulls which nest on the southern tip of the island. Everything on Samson was surveyed at 1:2500, and most of the cairns had additional larger scale surveys (figure 1). I do not recall who visited White Island. Although I believe one can reach it at low water, the tide does not retreat enough to walk without some
degree of wading and the reported field walls in the channel were never visible. Walling might now be visible on the island if a visit were made.

Since most prehistoric field boundaries are published as solid lines they cannot be readily distinguished from later walling whenever they occur together, so usually only the later, modern, walls are depicted. Thus on South Hill the prehistoric boundaries are omitted from the published maps.

Bryher was mostly covered by John Barton with some work by me, especially the southern part, including prehistoric settlement, cairns and Civil War earthworks. In the north part of the island, apart from a promontory fort, there was a vast cairnfield with about 150 cairns that had been published on the 1908 25-inch plan (figure 2). A few, large or with cists, are fairly obvious, but the majority are small and easily overlooked. The OS surveyors of 1906 probably had access to George Bonsor's unpublished work (1899–1901) on the cairns and stone alignments on Scilly, otherwise they would not have bothered to survey them. Certainly there seems to be no other authority to bring them to their attention. It was not until 1974 that Paul Ashbee noted a ‘system of linear cairn cemeteries on Shipman Head Down’. To make the numbers manageable the area was split into several blocks containing from six to 34 cairns. Some have cists and a few have kerbs but most are slight platforms or low mounds. Occasionally some are linked by walls of irregularly spaced boulders or small stones, producing the linear system described by Ashbee. A few cairns emulate the ‘boulder cairns’ on St Agnes, where a natural ‘grounder’ forms the focus against which a semi-circle of stones or a semi-circular platform has been created.

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Figure 2 Shipman Head, Bryher, on OS 1:2500 published 1908 (NLS)

When the Senior Surveyor, Cyril Wardale, paid a week’s visit from Archaeology Branch in May, among sites visited were cairn groups on St Agnes and Bryher. From a degree of scepticism he became convinced enough to write a report on one block (SV81NE1). There are still doubts as to whether some of the small mounds might not be field clearance rather than sepulchral or ritual, or even a combination of both; only excavation could provide some answers. Nevertheless, as it was unlikely that the OS would publish simple clearance cairns, for lack of evidence to the contrary we categorised all cairns as prehistoric and probably associated with burial.

On the north of Bryher the promontory fort had been depicted on the 1908 25-inch map as a wall with slopes to each side but, being uncertain as to what it could be, it was not described or named. Barton revised the feature with an additional representation at 1:500 scale in one and a half hours, but for publication at 1:10,000 it could only be shown as a broad bank. (With walking to the North End and back to the jetty it is unlikely that Barton would have had more than one hour for any other field work that day).

St Agnes and Gugh

Again, largely dealt with by Barton and myself. A variety of sites, from prehistoric houses, fields and occupation debris to a Civil War battery, maze and kelp pits. The latter were perhaps outside the OS remit, being historical rather than archaeological, but we were anxious to widen the range of antiquities beyond the medieval.

Like Bryher, cairns predominated; some were fine chambered tombs but the majority were small, low, occasionally kerbed and often associated with a grounder or field walls. At HQ a Recording Section had split them into workable groups of ten to twenty cairns and then correlated the information published over the years by a number of authorities who often had different views and totals, or even grid references, which created duplications. An example is the Kittern Hill, Gugh, linear cemetery (SV80NE3). Sixteen cairns had been published on the 2nd edition OS 1:2500 map in 1908 and a further two in 1963 on the Provisional Edition six-inch map. Within the OS SV80NE3 grouping there were five sources of information. During field work Barton found one cairn to be a duplicate in recording, and four were reclassified as hut circles; he found three unlisted cairns and the possible site of another, stripped to cover a modern grave. In total he surveyed 17 cairns but even now sorting them out is fraught with some uncertainty. There may be one site on St Agnes that was not recorded and which we did not see or recognise. Some years later Keith Gardner of Backwell, Bristol, wrote to me saying that he had found, on the extreme south east part of St Agnes, a length of boulder walling that might represent the fortification of an Iron Age cliff castle. I have never been back to see it.

Northwethel

The first edition OS 25-inch map of c 1890 showed not only a number of cairns but a sketchy representation of field walls extending over more than one hectare (‘hedges’ had been noted on Northwethel by Borlase in 1756). Though small, the island was visibly bracken infested, so to be sure of completing
work in half a day (further boat hire would be excessive) the full section was employed on 10 June. Barton dealt with the cairns and miscellaneous sites while Attrill and I endeavoured to interpret and survey the field system and possible hut circles in bracken and deep humus. The result was only partially successful since we considered there was probably more we had not found and some we had that might prove irrelevant. Only after a fire would there be reasonable exposure.

**St Helen’s** was mostly the responsibility of Nick Attrill. Not too bad for access: if the tides were right boats took passengers there for a few hours. Apart from revising the published plans of the Pest House and St Helen’s church complex, Attrill was able to survey groups of fields, a possible prehistoric hut platform and four cairns. The latter are ring-type cairns and could be described as huts but for their small size and the lack of entrance gaps. St Helen’s is another island where bracken obscured any further field walls which, with other monuments, may yet await discovery.

**Tean** I visited the island on one day in May and another in June. Chiefly recalled for the fragmentary prehistoric field systems, some submerged at high water, and chambered cairns, one of which was also submerged. There are a few hut circles and one rectilinear structure showing as a depression in the turf. (This does not appear on any map in my possession and I do not have field reports of sites on Tean.)

**St Martin’s** and **White Island** Investigation carried out by Attrill and Barton. I spent only two days on St Martin’s, working on Chapel Down and Burnt Hill, and checking a little of my colleagues’ work. Being left towards the end of our time on Scilly when the bracken was high, the island may not have had the attention it was due. Certainly some areas of field systems did not get surveyed.

**Eastern Isles** Investigated by Attrill and me, Great Ganilly and Nornour in mid June, being dropped from the St Martin’s boat, though field reports were written almost a month later. The tiny islands of Menawethan, Little Ganilly and Great Ganinick were visited in late July, during the last week on Scilly; a small private boat was hired which lay off each island with the boatman while investigation took place. Waiting for a calm sea had caused delay. On these all that was found was a single cairn and a field wall.

On the larger islands were the usual huts, field systems and numerous cairns. Although it seems to be unmentioned in the final records, I recall finding a saddle quern at the base of the cliff at, probably, Arthur Quay. Left where it was, it may have been given a note under ‘miscellaneous information’ and not given a site number. To be alone on the Arthurs on a fine June day was a delight only tempered by the problems of surveying from dubious ‘fixed’ points.

**Round Island** *(figure 3)* was incorporated into one of the Tean days. Before the lighthouse was built three cairns had been recorded: there was a faint possibility that some remains survived but nothing was found during the ten minutes spent scouring the small area of the top of the island unencumbered by buildings.
Tresco The island was often served by two boats a day to the southern Crow Point quay or, on occasions of high tides, to New Grimsby. From Crow Point it was a two-mile walk to the northern part of Tresco where the archaeology was densest. Field work was done in March, April and May but the major part in July. It amounted to about twenty seven days, of which Barton did four, Attrill eleven and I did twelve; the latter included some ‘finalling’ or checking of colleagues’ work.

Southern Tresco presented no problems save the tidal ones when dealing with the foreshores of Appletree Bay and Bathinghouse Porth. Here round houses and field walls were visible between high and low water marks and more were surveyed north of Appletree Point. As elsewhere, scouring and sand drift means that, of those published, more or less may be visible at any given time. I have been told that we missed some walling – it simply wasn’t visible at the time and we had not the luxury of being able to re-visit any site. However, there seems to have been an omission at Oliver’s Battery since, a year later, an Ancient Monuments Inspector recorded an earlier pentagonal fort visible as sand ramparts below the level of the Battery.

Northwards of Old and New Grimsby from Dial Rocks through Castle Down and Tregarthen Hill there was extensive evidence of prehistoric occupation: settlements with houses and field walls (*figure 4*), chambered cairns and cairnfields. The latter were gathered into manageable groups as on Bryher and St Agnes. Many had been depicted on the early 25-inch plans but it was not easy to
identify which: some could not be found, others were not on the plan. In one group, twenty five are shown on the 1908 25-inch map. In 1978 seven were not found in their published positions but eight were identified elsewhere, making a total of twenty six. It is unlikely that there had been any modern interference in the area, so it was either erroneous plotting by the surveyor or later by a draftsman. Even in 1978 there were few points on which to base surveys, and if items appeared to be correctly positioned time was not wasted in proving the cases.

The depiction on the 25-inch map of c1890 of a field using stone symbols instead of the normal solid lines for boundaries led Barton to the Dial Rocks settlement of round houses, middens and fields. Partly destroyed by modern enclosures, even now it appears to exceed eight hectares in area and, as Barton noted, part at least is later than a long linear bank on the west side of Castle Down. Other largely unrecorded settlements were found in the area of Castle Down Brow.

A further two very different items had, surprisingly, not been identified in the past. In 1754 Borlase published a description and illustration of a ‘stone circle and altar’ on Tresco but with no siting information (figure 5). This was resolved

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4 W Borlase, Observations on the antiquities historical and monumental of the county of Cornwall, Oxford, 1754, p189.
by a quick search of the Borlase manuscripts in the Morrab Library, Penzance, where it was found that his notes gave both direction and distance from King Charles’ Castle, as well as a sketch of the monument.

Figure 5: William Borlase’s sketch of the ‘stone circle and altar’ on Tresco

With this information it was soon identified and surveyed though someone in Archaeology Branch subsequently decided it should not be published on the OS map; rather annoying since it is an unusual monument. The second item was the extensive earthen outwork to King Charles’ Castle, cutting across the whole of the north of the island and probably to be dated to the 1550s.

St Mary’s As mentioned earlier, much of St Mary’s was dealt with spasmodically, on days when it was impractical to go to other islands or when the weather was poor. Of about 160 recorded sites, 130 of a wide variety necessitated field work. The others were unresolvable, mostly stray finds of artefacts for which there was no accurate provenance. These were known as ‘marginals’ since they were noted in a column down the right hand side of the Record Sheet. One major site was the complex of Neolithic, Bronze Age and Roman period settlement excavated at Halangy by Paul Ashbee, with its houses, fields and cairns.

More difficult was the identification of the numerous Civil War earthworks. Troutbeck\(^5\) in his Survey gives broad descriptions of batteries, redoubts and breastworks, the latter being the most troublesome. Some had evidently been destroyed by coastal erosion, while other intermittent stretches of low cliff-top bank may have had some other purpose and were accepted with a slight degree of doubt. By contrast the multi-period fortifications of the Garrison had been accurately plotted for us at 1:2500 from air photographs; it was simply a matter of compiling an adequate report on their chronology and condition.

St Mary’s was interesting in its variety, even if the occasional site was puzzling. An example is Giants Castle. Apart from a rise in sea level there must have been a massive amount of cliff erosion since there is but a few square metres of cliff top rock on the seaward side of the ramparts; nothing that is now defensible.

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Leaving Scilly

On Monday 31 July 1978 we set about the packing of our OS material and dismantling the contents of the office, returning furniture, desk lamps and other items to the school’s basement store. (The other OS surveyors were similarly engaged, though all their furniture, cabinets, lamps and equipment, was OS property and was to be shipped back to the mainland on the Scillonian on the following day.) We departed by helicopter on 1 August, all with enough accumulated leave, in lieu of weekend work, to have the rest of the week at home. Thereafter work was resumed on Dartmoor from where we had left it five and a half months ago. There had been no mishaps, such as missing a last boat back to St Mary’s. One temporary scare had been in the first month, when one member returned from work well after nightfall, having been marooned on Toll’s Island, St Mary’s, until the tide receded. The hours, from 8am to 9 or 10pm, were long but the work was thoroughly interesting and the people most friendly. I suspect the boatmen were relieved by our departure – no more taking up two seats, one for equipment, and no more pleas for diversions to tiny islands during normal trips.

The Executive’s Office helped in various ways, even with photocopying. The Honorary Museum Curator and assistants provided extended access; landladies produced excellent accommodation and accepted our curious working patterns. There were those who assisted when plied with archaeological queries: the late Paul Ashbee, the late Miss Vivien Russell and Professor Charles Thomas, who not only visited but supplied copies of his own research. Finally and not least is the debt owed to the headmaster, staff and caretaker of the School, especially Mrs Mackenzie, who so kindly gave up the practice room of her music class so that it could be our office.

Appendix: some notes concerning the Scillonian surveys

The first OS survey of the Isles of Scilly, with plans at 1:2500 scale, was published in 1889–1890. From these plans the 1:10,560 (six-inch) maps were drawn. Later, from the six-inch maps, the two-and-a-half inch maps were created. There was a revision of the 25-inch in 1906 and the plans redrawn as the Second Edition, published in 1908, followed by a Second Edition six-inch. In 1958 there was some minor, partial, revision, published in 1963 as a Provisional Edition six-inch with a National Grid base. A two-and-a-half-inch (1:25,000) map was produced in 1964.

Following the 1978 revision, the six-inch sheets were in 1980 replaced by the metric 1:10,000 sheets, with some slight changes to the coverage. There are now six sheets instead of the previous eight but this means one sheet may contain elements of several of the previous ones; for example, one has parts of SV80NE, 81SE, 90NW and 91SW. The revised two-and-a-half-inch of 1982 was unaffected in this respect, save for a useful inset of Hugh Town at 1:10,000 scale.

Archaeology Branch, disbanded in 1983, adapted the current sheet numbering by cutting and mounting them so that the new Record Sheets conformed to the old numbers. Presumably the system continues with the successors to
Archaeology Branch, firstly the Royal Commission on the Historical Monuments of England (RCHME) and now the National Archaeological Record of English Heritage.

**Air photographs and the production of maps and plans**

The Admiralty made an air survey of the islands in October 1974 but this was purely for tides and updating charts. The OS made their air photography survey in June 1976 with photographs produced at 1:2500 scale to update all the old County Series 25-inch plans. The OS Photogrammetry Section plotted all the details from these photos, creating a series of updated 25-inch plans, each covering an area of one square kilometre. These were issued to the Field Surveyors, who then checked them on the ground, adding and deleting detail as necessary – appearances from the air can be deceptive. Names had to be written on the plans and also a series of codes to denote types of vegetation and other features for use by draftsmen when the completed field work was returned to Southampton. The 1:10,000 plans were treated similarly.

Archaeology Branch surveyors did not have the above documents to work on, only the 1908 25-inch sheets, gridded and cut to one square kilometre size. Surveys were done on these and then transferred to the Field Surveyors’ 25-inch or 1:10,000 plans as appropriate. We either borrowed them for a short while or went to their office, which had been a flat attached to the school, very close to us.

**Publications and omissions**

It took two years from the completion of field work to publication of the 1:10,000 maps and about four years until the two-and-a-half-inch Leisure Map appeared.

Archaeology Branch had small sections responsible for the processing of returned field work; this included decisions on what should be published at different scales and the descriptive names. Material was then forwarded to the OS Department of Map Production and the draftsmen for whom archaeology was a minor part of their task. There seems to have been no system of proof reading by Archaeology Branch before printing started. Generally the popular two-and-a-half-inch Leisure Map (the last produced) is a direct reduction of the 1:10,000 survey except for lettering which has to be larger and is therefore more restricted in application. Even so, some items may be obscured or omitted on a 1:10,000 sheet.

Examples occur (on SV81NE) on North Tresco. The name ‘Castle Down Brow’ has necessitated the omission of three hut circles. Another, and part of an adjacent field system, had to give place to the descriptions ‘Settlement & Field System’ and ‘Battery (remains of)’. Again on North Tresco there is a line of pits noted as ‘Old Tin Workings’. These were surveyed on the 1908 25-inch and retained in 1978. The pits are not shown on the 1963 six-inch or the 1980 1:10,000 although the description remains. For lack of room nothing has been shown on any two-and-a-half-inch. Occasionally an erroneous symbol has been used. Just north of Higher Town, St Agnes, the hut circle of ‘Hut Circle & Field System’ is shown with a cairn symbol; a similar item occurs on Samson and a thorough perusal would probably produce others.
On a Record Card there is a heading box in which the descriptive name is given when publication is required; for example, ‘Battery’. A cross (‘X’) in the box means not to be published. For good reasons it was decided that kelp pits were of historical, if not of archaeological, interest. On Bryher and St Mary’s they are named ‘Old Kelp Pit’ in ordinary type face, yet two on Gugh are completely ignored, evidence of inconsistency.

The most serious errors, because they are obvious on the ground, are the omissions by OS draftsmen, and consequently from the published maps, of surveyed cairns in the large cairn groups. A group of up to four cairns is shown correctly but above that number only about half are portrayed; it is not a matter of restricted space since they are mostly in areas unencumbered by other detail.

On Shipman Head, Bryher, 113 cairns were surveyed but only 46 published. On north Tresco, 63 were surveyed and 34 published. Together, on Tresco, Bryher and St Agnes, of 254 cairns surveyed on the field maps, only 132 were transferred to the publication maps. This of course makes a complete nonsense on the ground; not only can you rarely establish a specific cairn on the map, one cannot use them to find one’s position on the ground. That Archaeology Branch authorised the publication of them all is clear by reference to the box on the Record Cards. Since there is unlikely to be another revision for a century, these gross errors remain for posterity.

All information recorded on the Record Sheets was transferred to the 1:10,000 scale when published and thereafter kept updated as far as possible. At Archaeology Branch the old six-inch Field Sheets and Record Sheets were most probably destroyed. (With the advent of ‘digitisation’ OS maps of 1:10,000 or larger are probably more simplified, and the former Archaeology Branch Record Cards at the National Archaeological Record have, I believe, been slimmed in content when computerised, though the originals are archived). All updated material retained by the author was transferred at the end of 2004 to the Museum on the Isles of Scilly and contains material not otherwise available: this includes a listing of all cairns not published on the 1:10,000 maps.

Norman Victor Quinnell
After serving as an air navigator with the RAF during and following WW2, Quinnell joined the OS as a cartographer in 1947. In 1951 he was recruited into the OS Archaeology Division; and thus began a long career as an archaeological field investigator. In an obituary published in 2008, his friend and colleague Martin Fletcher wrote: ‘His duties involved the precise survey and diagnostic interpretation of archaeological monuments for their depiction on large scale OS plans. It is fair to say that if a monument was not shown on an OS plan, then legally it did not exist. The challenge for Norman and his colleagues was therefore to ensure that as much archaeological detail as possible was surveyed and depicted. The result was that users of the OS large-scale plans such as planning authorities, farmers and builders were aware of their existence, especially in urban areas where rapid development was occurring at the time. Large numbers of previously unrecorded monuments were identified and surveyed by Norman and his colleagues; arguably many owe their very
survival to their depiction on these plans. The archaeological symbols and descriptors such as ‘tumulus’, ‘earthwork’, ‘Roman Road’ that are so familiar to all users of the smaller scale OS maps, were the by-products of the archaeological recording and large-scale survey undertaken by the OS archaeological field investigators.

‘He was a caring curator of things that came into his possession. His collections were greatly augmented by his distrust of the higher echelons of the organisations for which he worked, which meant that he retained copies of large quantities of field work. His archaeological surveys and reports will remain a fine testimony to his commitment and dedication to the work he loved.’

Quinnell’s widow, Mrs Henrietta Quinnell, is a former President and now Vice President of the Cornish Archaeological Society (H.Quinnell@exeter.ac.uk).

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C-ing things in Kielder Forest

From time to time references to C roads, designated as such by the highway authorities but not labelled on maps or roadsigns, have appeared in *Sheetlines*.\(^1\) It is interesting that the official visitor map of Kielder Forest Park, available at local tourist offices and on the website [www.visitkielder.com](http://www.visitkielder.com), indicates the main route through the park as C200. This would seem to be unhelpful 'clutter' on the map, unless that information is on local signposts. Does any reader know if that is so? Certainly, the label isn’t on OS maps.

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\(^1\) the most recent being *Sheetlines* 106,50.
**Early Military Map Surveyors of the Board of Ordnance**

*Rose Mitchell and Emma Down*

Military map surveyors and the early history of the Ordnance Survey have long been subjects of historical study. Recently, The National Archives (TNA) undertook a two week cataloguing project to add to our knowledge of some of the Draughtsmen involved.

Details of the careers of more than two hundred of these men now enhance the online catalogue *Discovery*, using information from a card index compiled mainly by Peter Penfold, holder of TNA’s first specialist map post and the first head of the Map Department, created in 1977. It is not known exactly when the card index was compiled, but it was probably over a period of time in the 1960s and 1970s.

The index related to War Office record series, which include appointment and establishment books, reports, correspondence, and registers of plans. Piece descriptions, which were previously very brief - for example ‘Establishments 1783-1805’ - now list men’s names together with dates and brief details, such as posts to which they were appointed. The card index includes 325 references of individual appointments relating to 227 men, dated between 1722 and 1817. The data refers to eleven piece numbers within five War Office series:

- WO 34/206 Monthly Reports of the Drawing Room at the Tower 1778-1782 among papers of Baron Amherst, Commander in Chief 1712-1786;
- WO 44/517 Correspondence between the Ordnance Office and the War Office, this volume dated 1816-1819;
- WO 46/10 Ordnance Office out-letters, this volume dated 1775-1777;
- WO 55/419 Register of Artillery Pensions, Ireland, dated 1831; and WO 55/2281 Index of Correspondence about Ordnance Plans and Drawings 1700-1819.

The men whose careers are detailed in these volumes were the early cartographers of what we now know as the Ordnance Survey. They set the framework and standards for national mapping, which would be used throughout Britain and the British Empire. Some became well known, while others were less recognised.

Most men started their careers in the Drawing Room at the Tower of London. This was formally established in 1752, in the Board of Ordnance, which provided supplies for the army, including maps. Prior to this the relationship between the Drawing Room and military operations was somewhat informal, with Draughtsmen often being appointed through social connection.1 This is mirrored

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in the index cards with professions of the fathers of twenty men also listed alongside their own appointments.

Figure 1: a plan of the Drawing Room at the Tower, 1792, WORK 31/156

From summer 1752 a classification system was introduced in the Drawing Room, with a Chief Draughtsman to oversee five classes of Draughtsmen. A number of these appointments are now listed in the piece descriptions. While some men made a career in the Drawing Room and stayed there for many years, more than half gained promotions in other departments of the Ordnance and the Army, often within the Royal Engineers. In 1800 the civilian staff of the Drawing Room officially became the Royal Corps of Military Surveyors and Draughtsmen and were absorbed into the Army. The Corps was disbanded in 1817 but many of the men were retained to work on the Trigonometrical Survey. Many of the maps and plans they produced throughout their careers are now housed in the collections at The National Archives.

A notable cartographer who appeared in the project data was Robert Dawson, the father of Robert Kearsley Dawson, who oversaw the Tithe Survey of England and Wales and compiled the detailed instructions for the production of the tithe maps. Dawson the elder was renowned for his depictions of relief and topography, which he evidently passed onto his son.

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2 Marshall, ibid.
Dawson largely owed his place in cartographic history to another man who features in the index, William Gardner, who saw Dawson’s talents in the 1780s and who arranged for his employment by the Board of Ordnance. Gardner is perhaps better known for his work with Thomas Yeakell, also listed in the card index, and their work for the third Duke of Richmond on his large estate at Goodwood in Sussex. Here Gardner and Yeakell honed their map-making skills, as evident in their survey of the County of Sussex in 1778-1780.

The Duke of Richmond ensured that Yeakell and Gardner were employed among the Draughtsmen in the Tower of London. Gardner went on to oversee the production of the first Ordnance Survey maps, almost certainly influenced by his work with Yeakell on the map of Sussex. He attained the positions of Chief Draughtsman and later Chief Surveyor.

As well as finished maps, there survive ‘foul plans’ made by some of these men, rare survivals of the working plans or sketches from which the final map developed. The extract by Thomas Yeakell (figure 3) shows topography and roads around Wormshill near Sittingbourne in Kent, with a drawing in the margin of a church in both plan and elevation. The margins of these rough sketches also bear pen-wipes and doodles, words and calculations giving a glimpse into the mapmaking process outside the Drawing Room. Foul plans made by some of the other cartographers have also survived, including Dawson’s Isle of Wight (MR

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4 R Mitchell and A Janes, Maps their untold stories, (Bloomsbury, 2014), p.92, with larger colour image of sheet from Hampshire to Arundel, p.93.
1/489) and Charles Budgen’s plan of Hampshire, commonly referred to as ‘Budgen’s Rough Plans’ (MPHH 1/220 and MPH 1/580) (figure 4 below).

Figure 3: part of a field sketch by Thomas Yeakell with a church, 1778-1780. MPH 1/773/23

Figure 4: extract of sheet 4 from Budgen’s rough plans of Hampshire, showing the area around Havant and Emsworth with Emsworth Common to the north, 1798. MPHH 1/220

A useful study of relationships between foul and fair copy manuscript maps and related engraved maps in The National Archives was made by Ivan Parr while working at TNA; the lists include much work especially by Yeakell and Gardner.5

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Another individual whose appointments are listed in the volumes was John Peter Desmaretz, from the earlier period of the Drawing Room; he was appointed assistant Draughtsman in 1725, and the earliest date assigned to him in the card index is 1741 as Deputy Draughtsman. Like Yeakell and Gardner he spent much of his time out of the Drawing Room; he worked on a number of projects to develop harbours and dockyards, and to improve fortifications on the south coast of Britain. Many of his plans and surveys are held in TNA’s collections, including those for Landguard Fort and fortifications at Great Yarmouth, for harbours at Portsmouth, Sheerness and Shoreham-by-Sea, and for work in Senegal. Desmaretz was involved, along with Andrew Frazer and William Roy, in designing new channels at Dunkirk when Britain was responsible for the destruction of fortifications there in 1763. Whilst in the Tower, however, he was involved with training some of the new recruits, including the Durnford brothers and William Twiss.

Twiss was appointed to the Ordnance Office in July 1760, but later moved to the Royal Engineers, eventually gaining the rank of General. Most of his career was spent working on military defences, including work abroad in Gibraltar and Canada, as well as in Britain. In 1804 the first Martello Tower was built following a recommendation from Twiss, Captain WH Ford and Sir David Dundas to the Secretary of State for War. Twiss subsequently oversaw a number of the defences built on the coastline of south and east Britain to protect against possible invasion from France. TNA holds letters and reports by Twiss, and plans signed by him.

Occasionally the card index listed postings abroad. One of these appointments was that of Francis Assiotti to Minorca in 1780, from where he produced the map (figure 5 opposite). Although it has many aesthetic qualities, including the maritime-themed cartouche, it gives a distinctive nod to military endeavours. The insets detail the entrance to the Mediterranean and the settlement of Georgetown, now named Es Castell after the adjacent fort of St Phillip’s Castle. Assiotti is also known for his ‘List of Maps and Plans Belonging to the Right Honourable the Lords Commissioners for Trade and Plantations’ which he compiled in 1780 (CO 326/15). This inventory is often used by historians to trace the movement of maps.

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6 Marshall, ibid, pp.22.
7 Some of Desmaretz’ earlier work: Landguard Fort MPH 1/362, MPHH 1/703, MR 1/1167/1-2, WO 78/1410; Great Yarmouth MPH 1/1098/36-39; Portsmouth MPHH 1/291; Sheerness MPHH 1/112; Shoreham MR 1/906 and MR 1/935/2, Senegal MPF 1/142.
8 Some of Desmaretz’ work on Dunkirk: WO 124 Papers concerning the demolition of fortifications at Dunkirk, including correspondence from Desmaretz and Andrew Durnford; plans and profiles at MPF 1/177, MPF 1/270-271, MPF 1/350, MPF 1/331, MPF 1/358, MPFF 1/1, MPH 1/82, and MR 1/203.
9 Hewitt, ibid, pp.101-102.
10 Reports by Twiss for works at Dover and Shorncliffe are in Home Office Correspondence, HO 42. Plans linked to Twiss include those for works at Woolwich (MPH 1/480), Shorncliffe (MPH 1/1168) and Brighton (MPH 1/363).
Figure 5: ‘General Plan of the Island of Minorca’ by Francis Assiotti, 1780
WO 78/5647
Some of the men recorded in the card index are also listed in an article by Douglas W Marshall published in 1980. The project cross-referenced the card index data with the Draughtsmen listed by Marshall, finding 155 men who appeared in both lists. For these men, a reference to Marshall’s article has been included next to the name in the online catalogue data. Information about the same man may differ, and often the new data added is fuller. For instance, Marshall lists Jabez Anderson with a brief note that he had appointments in the period from about 1799 to his death, thought to be about 1810. The military surveyors card index project adds these details, drawn from a volume of correspondence about Draughtsmen: ‘Appointed extra Draughtsman on trigonometrical survey, p.162. Reached 2nd class, p.249. Died in foreign service between 1806-1817’.12

More than seventy men listed in the card index do not appear in Marshall’s article. The work of some of these men appears in TNA’s online catalogue Discovery. Some of the plans are described as copies made by cadets in the Drawing Room as a training exercise. One noteworthy man who does not appear in Marshall’s list, but is included in the card index is Reuben Burrow, noted as ‘Mathematical Master [in the Drawing Room at the Tower], 1776’.13 He was assistant to Neville Maskelyne and accompanied him on his trip to Schiehallion in Scotland in 1774 for an experiment to establish the density of the Earth. While Maskelyne undertook his observations and calculations, Burrow made a detailed survey of the mountain. The data from the trip was passed to Charles Hutton, professor of mathematics at the Royal Military Academy in Woolwich, to calculate the volume of the mountain. During this work Hutton used contour lines on his maps, instead of the traditional hachuring then used by British mapmakers, which became one of the distinctive features of the Ordnance Survey maps we know so well today.14 Burrow later travelled to India where he was mathematical teacher to the engineers’ corps in Bengal, and worked on measurements which enabled the length of an arc of the meridian along the Tropic of Cancer to be calculated by Isaac Dalby, who had assisted William Roy with the Greenwich to Paris triangulation.15

A number of other sources of evidence for early military mapmakers’ careers may be found at TNA beyond the records of the Board of Ordnance and of the War Office. For instance, William Roy’s Commission as Colonel, dated 29 August 1777, is at OS 3/410, while his will of 1790 is among probate records of the Prerogative Court of Canterbury at PROB 11/1194/32. Desmaretz’ will is at PROB 11/942/278, and that of Twiss at PROB 11/1726/206.

This project has helped draw detail on the careers of some of the early cartographers of the Ordnance Survey, based on a partial card index. Many more names are contained within these volumes, reports and registers, so it is hoped this project may pave the way for further enquiry and research.

11 Marshall, ibid, 40.
12 WO 55/2281; page numbers refer to this volume.
13 WO 55/3381, 92 The card index gives his name as Burrows.
14 R Hewitt, ibid, 63.
A minor mapping mystery: the Evan Water Aqueduct
(and some other unusual bridges)

Stephen JG Hall

Ordnance Survey maps of all scales are important resources for railway historians, although it is well understood that they can be inaccurate or inconsistent in detail. This is not a novel idea. In 1963, a railway historian noted sadly that “... the general maps of all periods are teeming with railway inaccuracies”.2,3 A single demonstration of an error will only be of major interest to a few enthusiasts, but when a context is found within which the error can be placed, it may be possible to draw conclusions or generate hypotheses of more general significance.

The Beattock Bank, a ten-mile incline on the West Coast Main Line (WCML) reaches its summit at 315 m ASL. It is very well known to railway enthusiasts and will also be familiar to a wide public due to its inclusion in W.H. Auden’s poem “Night Mail”, of 1936. Near the summit the WCML crosses from Dumfriesshire into Lanarkshire on the watershed between the River Clyde and the Evan Water, the latter eventually reaching the Solway Firth as the River Annan. The incline from Beattock station to the summit was very challenging in the days of steam power. The WCML, now electrified, continues to be heavily used and much of the original infrastructure has changed over the years.

About a mile south of the summit, at grid reference NS 9999 1439, bridge no. 258, known as Tank Bridge to railway workers, carries the Evan Water and a farm access road across the railway. Babtie, Shaw and Morton were consulting engineers for its construction during electrification of the WCML which was completed in May 1974. It replaced the original and rather remarkable structure, designed by Isaac Dodds (1801-1882) and illustrated in his biography4 (Plates 1-4). Dodds played a part in the development of the box girder, carrying out experiments at least since 1838 on malleable or wrought iron (post-processed iron with a very low carbon content). Before the advent of steel this was the only material, other than masonry and timber, for the economical construction of railway bridges, cast iron being notoriously weak in tension though strong in compression. The original plan for dealing with the Evan Water was a timber

1 Institute of Landscape Ecology, Estonian University of Life Sciences, Kreutzwaldi 5, 51014 Tartu, Estonia s.hall973@btinternet.com.
4 S Snell, A story of railway pioneers. Being an account of the inventions and works of Isaac Dodds and his son Thomas Weatherburn Dodds. London, Selwyn & Blount, 1921. In a footnote, the author describes how original Caledonian Railway records and drawings of the bridge were not traceable.
trough spanning almost 30 metres. Dodds, consulted by the principal engineers of the line, proposed a rectangular-section trough of malleable iron for the stream to run through, with the road on the top, referring to his own experimental studies. The initial objections of the government inspector, based on the previous lack of data on the behaviour of malleable iron girders under load, were overcome.

The Evan Water Aqueduct in the early twentieth century. This has been replaced by Bridge 258, known to railway operational staff as Tank Bridge. (Snell, 1921; see footnote 4).
On completion of the section from Beattock village to near Motherwell, the main line from London to Glasgow was opened throughout on 15 February 1848. Two days later the southbound journey was described in the Caledonian Mercury: “… Not five minutes after the Clyde becomes invisible … we are going down the tiny source of the Elvan, one of the tributaries of the Annan … very soon … we see it carried in an aqueduct 20 feet above our heads …”.

Evidently not only was the Evan Water aqueduct innovative in engineering terms, it was also considered worthy of note by the Mercury’s readership. Its peculiarity, however, seems to have passed by the Ordnance Survey.

Above: the Evan Water Aqueduct in April 1966 (author’s photograph)

Left: freight train driver’s view of the present-day Tank Bridge, from the south. 9 January 2010 (photograph: Adrian Nicholls)
The first edition six-inch map, surveyed in 1859, depicts the railway as crossing the stream (*Figure 1*) – manifestly in error. This could only be correct if (a) the Caledonian Mercury account was wrong and (b) the final gradient to the summit had been very considerably eased in the decade after the opening of the line – and there is no evidence of any kind for that.

*Figure 1: from Lanarkshire, Sheet L (includes: Crawford). Ordnance Survey Six-inch First edition, Scotland, 1843-1882 Surveyed 1859, published 1863*

In the second edition, the depiction is muddled, and a footbridge is labelled but not shown (*Figure 2, below*).
In the next revision matters have finally been put to rights (Figure 3):

**Figure 3**: from Lanarkshire Sheet L.NE (including Crawford) Ordnance Survey Six-inch Edition of 1913. Surveyed 1858, revised 1909, published 1913.

**Wider significance**
It is hard to accept that the surveyors were at fault for the error, given the detail with which other nearby infrastructural and landscape features were depicted. A detailed investigation might show how it arose and persisted, but it does provide a starting point for a more general investigation of how unfamiliar or novel infrastructure has been labelled or captioned. This has contemporary resonance, for example in how wind farms are treated.\(^5\) Many nineteenth century railway bridges were of innovative and therefore unusual design, and unlike much industrial infrastructure they were often encountered by the public. Change, or continuity, in the ways these features were labelled, might be indicative of changes in official views of the functionality of maps in general.

**Some other unusual railway bridges**
Weedon, Northamptonshire, is also on the WCML, 250 miles south of Beattock Summit. It too possessed an unusual bridge, at SP 63104 59646. This length of line was opened by the London and Birmingham Railway in 1838 and here it runs close beside the Grand Union Canal (opened 1796). A branch of the canal served the adjacent Royal Ordnance Depot (a remarkable Georgian military establishment)\(^6\), the water level being only slightly below that of the railway track. Just as in the case of the Evan Water aqueduct, there was a degree of


\(^6\) [https://historicengland.org.uk/listing/the-list/list-entry/1076515](https://historicengland.org.uk/listing/the-list/list-entry/1076515)
public interest in the situation. In The Penny Magazine of 1838\textsuperscript{7}, a temporary bridge is mentioned: “… a bridge is to be erected … intended to be a kind of self-acting ‘swing’ bridge”. In fact, a “drawbridge” was designed by the railway’s chief engineer, Robert Stephenson.\textsuperscript{8} A removable section of the trackwork was mounted on a trolley which was manhandled to one side when a boat required passage. This procedure was under the authority of the Weedon station master on receipt of a request from the Commissary of Ordnance.\textsuperscript{9}

The six-inch map of 1884 gives no hint of this remarkable feature on a nationally important main line (figure 4). The general public was probably not so nonchalant. Indeed, an article in the Northampton Herald (22 July 1882) had described it as “a contrived trap in the line which were the slightest error or omission to occur … might cause a hideous railway accident”.

In 1888 (no such accident having occurred) the arrangement was abolished, the main line being realigned and its elevation increased, the original track

\textsuperscript{7} ‘Railway Trips. London and Birmingham – No. 1’ Monthly supplement of The Penny Magazine, 8, no. 411, July 31 to August 31, 1838, 329-336.

\textsuperscript{8} J Jebb, ‘Description of a drawbridge on the London and Birmingham Railway, at Weedon’, Papers on Subjects Connected with the Duties of the Corps of Royal Engineers 3, 1839, 189-191.

\textsuperscript{9} Extract from London & North Western Railway Appendix to Working Timetable January 1879 (Booklet in the Clinker Collection at Brunel University).
(retaining the drawbridge) being used to serve sidings. The drawbridge was scrapped in the 1950s.\textsuperscript{10}

The drawbridge was identified as such on the 25-inch map of 1900, the main line being carried on a conventional bridge (figure 5).

![Figure 5](image)

\textit{Figure 5: from Northamptonshire XLIII.12 (Dodford; Flore; Nether Heyford; Stowe Nine Churches; Weedon Bec). Revised: 1899, published: 1900. Ordnance Survey 25-inch England and Wales, 1841-1952.}

Early twentieth century comparative accounts of railway bridges seem to be scarce, but in 1907 there appeared a general article in the Railway Magazine.\textsuperscript{11} The author mentioned the Weedon drawbridge and also paid particular attention to the swing bridge carrying the Oxford-Bletchley line over the Sheepwash Channel, that connects the Oxford Canal to the Thames. This is the Rewley Road swing bridge, which gave access to the eponymous passenger station and goods yard which closed in October 1951 and May 1984 respectively. Conservation is proceeding of the bridge whose historic significance is now recognised.\textsuperscript{12} Built in 1850-51, also to a design of Robert Stephenson, the 85-ton, hand-operated bridge

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\textsuperscript{11} AM Phillip, ‘Swing and other opening bridges No. 2 - on London and North-Western Railway’, \textit{Railway Magazine}, March 1907, 228-232.

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served the Oxford terminus of the London and North Western Railway (LNWR) line from Bletchley, though the original one was upgraded progressively from 1890. In contrast the parallel bridge carries heavy traffic on the former Great Western Railway (GWR) line and is of conventional construction. Its greater clearance over the Sheepwash Channel was made possible by the ground level having been raised for the GWR station. The swing bridge was not captioned in the (admittedly cartographically dense) six inch map surveyed in 1876, but it was adequately labelled in the 25 inch map of 1911 (figure 6).

Figure 6 : from Berkshire II.14 (North Hinksey; Oxford; Wytham). Ordnance Survey 25-inch England and Wales, Edition of 1921 Revised 1911 Published 1921.

The other swing bridges cited in the Railway Magazine article were in the Liverpool, Widnes and St Helens areas (see appendix) and in all these Merseyside cases except one the bridge is appropriately captioned on the twentieth century revisions of the 25 inch maps. Perhaps the local names for these rather unfamiliar structures were adopted for the labelling of the maps. The available maps are of limited time depth and the wording of the captions lacks uniformity, indicating an *ad hoc* approach, but the quality of labelling clearly improves over time.

**Conclusions**

The map, surveyed in 1859, whose inaccuracy in respect of the Evan Water Aqueduct prompted this study, is full of incidental interest. On this sheet, labelled railway infrastructure includes *Signal Post, Water Column, Electric Telegraph* and *M.P.* (milepost). Antiquities are labelled; *Roman Camp, Roman Road, Tower* and

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Cairn, and the Site of the Battle between Johnstone of Whampray and Crichton of Sanquhar, AD 1597. Also located are Sheepfolds, Sheep Shelters, and Sheep Rees, indicating an appreciation of some of the technicalities of sheep husbandry. In a large font is Mineral Spring (Chalybeate), occupying a space which would have conflicted with an adequate label for the Evan Water Bridge, had one been deemed appropriate. In the 1909 revision, the Mineral Spring (Chalybeate) is no longer on the map, and the bridge has been more accurately rendered (after a half-hearted attempt at correction in the 1898 revision), with a satisfactory label (Bridge & Aqueduct). An economical explanation of the error would be that in 1859 the notion of a stream crossing a railway was incomprehensible to the cartographers.

These maps also illustrate how the labelling of an unfamiliar piece of infrastructure improved as the editions progressed. This is paralleled to varying degrees in the labelling of the Weedon, Oxford and Merseyside bridges. Maybe there was a shift during the late nineteenth century /early twentieth century in cartographic priorities in the Ordnance Survey towards a fuller appreciation of functional infrastructure?

Acknowledgements
The study was only practicable thanks to the National Library of Scotland digitisations of Ordnance Survey maps. All the maps in this paper were sourced from the NLS.
Many thanks also to Geoff Tann, Alan Lloyd, David Elvy, Julia Johns, Adrian Nicholls, Laurence Waters, Liz Woolley, Tom Hassall, Rob Wheeler. The conclusions and opinions are solely attributable to the author.
### Appendix

Table 1: map details (25 inch England and Wales, 1841-1952) for the swing bridges described by Phillp (1907).

<table>
<thead>
<tr>
<th>Location</th>
<th>OS Grid Reference</th>
<th>Description</th>
<th>Surveyed</th>
<th>Revised</th>
<th>Published</th>
<th>Captioned As</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxford</td>
<td>SP50419 06570</td>
<td>Berkshire II.14 (North Hinksey; Oxford; Wytham)</td>
<td>1876</td>
<td>1911</td>
<td>1921</td>
<td>Swing Bridge</td>
</tr>
<tr>
<td>Weedon</td>
<td>SP63104 59646</td>
<td>Northamptonshire XLIII.12 (Dodford; Flore; Nether Heyford; Stowe Nine Churches; Weedon Bec)</td>
<td>1876</td>
<td>1899</td>
<td>1900</td>
<td>Draw Bridge</td>
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<tr>
<td>Garston Docks</td>
<td>SJ39534 84105</td>
<td>Lancashire CXIII.16 (Liverpool)</td>
<td>1891-1892</td>
<td>1905</td>
<td>1907</td>
<td>Swing-bridge, not captioned in 1893 or in 1907</td>
</tr>
<tr>
<td>St Helens Canal (Sankey Bridges)</td>
<td>SJ58416 87590</td>
<td>Lancashire CXV.4 (Great Sankey; Penketh; Warrington)</td>
<td>1891 to 1892</td>
<td>1905</td>
<td>1907</td>
<td>Swing Bridge, not captioned in 1893</td>
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<tr>
<td>Widnes Dock</td>
<td>SJ51568 84673</td>
<td>Lancashire CXV.9 (Halton; Runcorn; Widnes)</td>
<td>1891 to 1892</td>
<td>1926</td>
<td>1928</td>
<td>Swing-bridge, not captioned in 1899 or 1907</td>
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</tbody>
</table>

Table 2: minor swing bridges over the St Helens Canal.

<table>
<thead>
<tr>
<th>Location</th>
<th>OS Grid Reference</th>
<th>Description</th>
<th>Surveyed</th>
<th>Revised</th>
<th>Published</th>
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<tr>
<td>St Helens Railway</td>
<td>SJ51578 95093</td>
<td>Lancashire CVIII.1 (St Helens)</td>
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<td>Pocket Nook Branch</td>
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<td></td>
<td>Swing Bridge</td>
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<tr>
<td>Ravenhead Branch</td>
<td>SJ51426 94813</td>
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<td></td>
<td></td>
<td></td>
<td>Not captioned in 1894 or in 1928</td>
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<tr>
<td>Blackbrook Branch</td>
<td>SJ53263 95963</td>
<td>Lancashire Cl.14 (Ashton In Makerfield etc)</td>
<td></td>
<td>1906</td>
<td>1908</td>
<td>Redgate Swing Bridge</td>
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<tr>
<td>Haydock Branch</td>
<td>SJ53563 96102</td>
<td>Lancashire Cl.14 (as above)</td>
<td></td>
<td></td>
<td></td>
<td>Swing Bridge</td>
</tr>
</tbody>
</table>
Mapping the Ocean Gateway
Jack Kirby

This map was produced in 2009 by Ordnance Survey in partnership with the property developer, port and airport operator The Peel Group. It was created for a dual promotional purpose. Its primary function is to promote the regional development initiative known as Ocean Gateway – the corridor between Liverpool and Manchester, broadly following the River Mersey and the Manchester Ship Canal. A secondary function is to promote the use of OS mapping and geographic information systems.

The map was commissioned by Peter Nears, Peel’s Strategic Planning Director. A CCS member, his recollections have greatly informed this article. The dual purpose of the map is well captured by introductory text signed by Dan Hughes, then OS Sector Manager of Land and Property: “We are delighted to be working on the Ocean Gateway initiative with Peel Holdings. This map highlights the exemplar projects that are planned along the corridor of waterways, from the mouth of the Mersey to the docklands in Manchester, via the Ship Canal. Our geographic information enables the search and visualisation of these types of developments, from the planning stage through to completion and beyond.”

This article outlines the Ocean Gateway concept and the origins of the map, before describing the features of the map. The extent to which the map is successful in promoting the application of different types of OS mapping is considered. The article concludes by examining what has changed on OS mapping as a result of Ocean Gateway projects to date.

Ocean Gateway
The name was coined by The Peel Group to refer to over fifty sites along the corridor in its ownership, which it proposed to develop over fifty years. Ocean Gateway was formally launched on 5 September 2008.

The corridor covered by Ocean Gateway has previously been called the Mersey Belt. The name Ocean Gateway also evokes the port of Liverpool’s

historical reputation as the ‘western gateway to the Empire’. The contemporaneous Thames Gateway regeneration scheme in south-east England was significant as a partial precedent for both Ocean Gateway and the map.

In 2006, the draft regional spatial strategy for the north-west was published, laying emphasis on regional planning. In the south-west, the London Thames Gateway Development Corporation had been given planning powers that cut across multiple local authority boundaries. Peel therefore promoted the Ocean Gateway concept as a strategic development opportunity for north-west England, transcending political and administrative boundaries.

Subsequently the north-west concept was broadened beyond a sole developer to Atlantic Gateway, featuring a wider range of private sector projects in the same geographical area, in combination with public sector support. Peel’s development schemes were nevertheless central to Atlantic Gateway. In 2019, Atlantic Gateway’s partnership board was disbanded and three Local Enterprise Partnerships took over coordinating activity. Since 2008, Peel has continually used the Ocean Gateway name as an umbrella for promoting its own projects, as set out in the map and Peel’s accompanying Prospectus document, published around the same time.

**Origins of the map**
To understand the Ocean Gateway Map, it is first necessary to turn to another series of maps – those of the Thames Gateway. In the early years of this century, government strongly supported regeneration on both sides of the Thames Estuary, founding two Urban Development Corporations in 2004. The same year, the first of a series of large annual conferences called the Thames Gateway Forum was held at London’s Excel Centre.

In 2006, Peter Nears spoke at that year’s Thames Gateway Forum. The conference delegate pack included a specially produced Ordnance Survey map, Location data for the Thames Gateway, highlighting development sites throughout the area through inset maps using a variety of OS mapping.

Further maps were published subsequently: The Thames Gateway Forum 2007 and The Thames Gateway Forum 2008. Produced with a range of public and

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6 Atlantic Gateway website, www.atlanticgateway.co.uk/


8 Peel Ports owns the London Medway ports of Sheerness and Chatham.
private sector partners, these maps contained greater textual information about case study locations throughout the Thames Gateway region. The design of the 2008 edition was to have a major influence on the Ocean Gateway map.

Peter Nears was inspired by the Thames Gateway maps. Peel already had a relationship with Ordnance Survey as a Developer Partner. Peel Group’s GIS Manager, Judith Redkwa, approached OS, which responded positively to the opportunity for a deeper partnership with the private sector. Nears and Redkwa then visited Southampton, and worked with OS to produce mock-up and final versions of the map.9

**Map cover**

The map comes in a card cover, and is titled *Ocean Gateway Map: 12 Exemplar Projects*. The cover also bears the date 2009, the slogan ‘A Vision for the North West’, and the logos of Ordnance Survey, Ocean Gateway and Peel Group.

The cover (p 35) features a location map showing an outline of the coast, the Manchester Ship Canal, and Bridgewater Canal (both owned by Peel) and almost fifty sites represented with square or oblong blocks. The overall design, with white text on a background in Peel’s corporate red, is reminiscent of a red One-inch Seventh Series cover. Peter Nears, a collector of OS covers, confirms that this is not entirely coincidental.10 The reverse of the cover contains contact details for Peter Nears and a colleague, Lindsey Ashworth, then Peel’s Development Director. Inside the cover is an extensive description of OS MasterMap and a number of its layers. This text is promotional, highlighting the ability of users to add data to the layers. There are detailed descriptions and small colour inset examples (repeating some of those found on the map itself) of the OS MasterMap Topography, Imagery and ITN (Integrated Transport Network) layers.

There are also descriptions and examples of 1:50,000 Scale Colour Raster and OS Landplan products. Given the leading emphasis of the text on the virtues of MasterMap, it is perhaps ironic that the base map for the Ocean Gateway Map is a reduced version of the 1:50,000 Scale Colour Raster. The map was printed by Ordnance Survey and is Crown copyright. It does not have an ISBN,11 and was distributed by Peel.

**The map**

The map consists of a single-sided sheet, with the top and bottom and left side (just over half the area of the sheet in total) devoted to boxes containing the twelve exemplar case studies, together with introductory and contextual text. This leaves the centre of the sheet for a base map covering an area from the River Dee in the west to Stockport in the east, and from Bolton in the north to Macclesfield in the south.

Outside this core Ocean Gateway area, the base map is overlaid attractively with a green tint and forms a backdrop to the case study boxes. The core map

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9 Peter Nears, personal communication, 20 April 2020.
10 Personal communications, 20 April and 2 May 2020.
11 As a result there are not copies in Legal Deposit Libraries.
area is interrupted by overlaid inset maps featuring the exemplar project sites, joined by wide coloured lines to open circles over the sites (figure 1 below), and lines to the case studies, illustrated with photographs and artists’ impressions of developments.

Figure 1 (left) detail of the base map. The green circles highlight ‘Sustainable resources’ projects, Power from the Mersey and Speke and Garston Coastal Reserve. The blue circles are for ‘Transport and logistics’ projects at Liverpool John Lennon Airport and Port Wirral. The pink circle shows a ‘Communities and regeneration’ project at Ellesmere Quays.

The overall design is clearly inspired by the Thames Gateway Forum Map 2008. Although the base map is derived from the 1:50,000 Scale Colour Raster (effectively Landranger mapping), it is reduced to 1:100,000 scale. Together with the case study texts, the absence of a scale and legend on the map indicates its illustrative rather than navigational purpose.

The reduced mapping makes the base map detail slightly difficult to read. The argument for an OS 1:100,000 scale map has been made previously in Sheetlines by Richard Oliver, and here is a further use case.

Superimposed in widely spaced block capitals on the base map are the names ‘Liverpool City Region’ and ‘Manchester City Region’. Building on proposals and agreements between English local authorities for a number of city regions, on 22 April 2009, the Chancellor announced in the Budget two pilot city regions in Greater Manchester and Leeds. Published months later, the map names the areas, but in line with the desire to cross political boundaries, the city region boundaries are not shown.

**Inset Maps**

Despite the map’s subtitle of ‘12 Exemplar Projects’, a number of the case studies cover more than one project (as listed in the Ocean Gateway Prospectus) on adjacent or nearby sites. This means that there are actually 17 inset maps on the sheet.

Given that the introduction from OS states ‘our geographic information enables the search and visualisation of these types of developments’, the inset maps are variously more and less successful in helping to understand the sites of each project. The inset maps are reproduced at a range of scales, not always appropriate to the mapping.

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12 Eg Sheetlines 80, 9.
13 Chancellor of the Exchequer's Budget statement, 22 April 2009.
Successful inset maps are exemplified by those for Trafford Wharfside and MediaCityUK. For Trafford Wharfside, the site by the Manchester Ship Canal is clearly highlighted by fading the surrounding colours of the Topography Layer. At MediaCityUK \(\text{(figure 2, left)}\), the site is shown in the Imagery Layer with the surrounding land in the Topography Layer.

The combination of completed buildings and construction sites visible in the aerial photograph reinforces the reference in the case study to completion of the first phase being due in 2011.

The Liverpool Waters and Wirral Waters projects each involve regeneration of dockland, in north Liverpool and Birkenhead respectively. The text stresses ‘prime locations at the urban core’ and ‘transport accessibility’. The chosen MasterMap layer is the ITN (Integrated Transport Network). Despite the name, this layer actually only indicated road networks; it has since been replaced by the more accurately named Highways Network series of layers. The dockland sites of the two Waters projects are not highlighted, making the inset maps less clear than others.

\[\text{Figure 3 (left): the Liverpool Waters and Wirral Waters projects. Figure 4 (right): the Power from the Mersey project.}\]

The Power from the Mersey project is illustrated with OS Landplan mapping (since renamed VectorMap Local). This mapping originates at 1:10,000 scale, but is here reduced to approximately 1:70,000, making the text illegible. \(\text{(figure 4)}\).

Not all the projects are illustrated with MasterMap. The inset for Speke and Garston Coastal Reserve with Liverpool International Business Park (two adjacent
project sites) uses the Imagery Layer, but this is overlaid with 1:25,000 series mapping. This combination is also used for the Salford Forest Park inset. The Ince Resource Recovery Park\textsuperscript{14} inset simply uses 1:50,000 mapping, this time reduced to around 1:80,000.

**Ocean Gateway one decade on**

Peel has commissioned and published, at intervals, two economic impact analysis reports reviewing the achievements and future potential of Ocean Gateway.\textsuperscript{15} There is also a more promotional *Decade of Delivery* review document, which summarises the £5bn of investment to date. This is a major achievement considering that the period from 2008 – 2018 was adversely impacted by the 2008 financial crisis, ensuing credit crunch and more recently Brexit uncertainty.\textsuperscript{16}

Following the principle of using maps to study change, it is possible to see which of the exemplar projects have progressed furthest since 2009. The greatest physical change, and one of the largest Ocean Gateway investments to date, has been in the project titled on the map as Royal Seaforth Post-Panamax Container Terminal. Prior to completion, the £400m project was rebranded as Liverpool2,\textsuperscript{17} although the site is actually in Bootle in the metropolitan borough of Sefton. The project has literally changed the shape of the coastline by reclaiming land (figure 5). Material from the River Mersey has been dredged and used in the construction of a new triangular quay, an in-river terminal that can accommodate Post-Panamax vessels. Post-Panamax is a term for a size of ship too large for the original locks of the Panama Canal.\textsuperscript{18} The Port was previously limited by the size of the entrance to the 1927 Gladstone Dock, shown on the inset map.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure5.png}
\caption{Figure 5}
\end{figure}

\textsuperscript{14} The site is now branded Protos, http://thisisprotos.com/site-info/
\textsuperscript{15} Amion Consulting, Ocean Gateway - Economic Impact Assessment: Summary Reports (2014 and 2018)
\textsuperscript{16} Ocean Gateway – Decade of Delivery, Peel Group (2019)
\textsuperscript{17} Introducing Liverpool2, https://www.peelports.com/campaigns/liverpool2
\textsuperscript{18} J-P Rodrigue et al. ‘Evolution of Container Ships’, *The Geography of Transport Systems*, Hofstra University, Department of Global Studies & Geography, (2017).
An adjacent Ocean Gateway project not listed on the map has also been completed. Mersey Wind Farms has installed new turbines, which can be seen along with the new quay on 1:25,000 mapping. The other substantial investment has been at MediaCityUK - by far the largest project - with more than £1.4bn of investment, although one whose origins predated Ocean Gateway. The development houses regional headquarters for BBC, a campus of the University of Salford, and other commercial tenants.

Not every project has proceeded as expected. Projected residential developments shown on the map at Ellesmere Quays and Runcorn Waterfront were cancelled after the sites were ‘retained for operational docks in response to strengthening demand across the Ship Canal’.19

Salford Forest Park, which was proposed to have included a racecourse, equestrian centre, and championship golf course, was withdrawn following the refusal of planning permission and an unsuccessful appeal.20 However part of the scheme featured the restoration of historic gardens at Worsley New Hall (long since demolished). Here a new RHS Garden Bridgewater visitor attraction is being developed, with opening planned for 2021, at the time of writing.21

Other major investments have included growth at Liverpool International Business Park (anticipated in the case study on the map) and £300m for a new paper mill at Partington, not one of the exemplar projects. Many of the other major projects, such as Liverpool Waters and Wirral Waters, are still in the early stages of development with little change to date on the ground.

Conclusion

Although the map does not detail all the Ocean Gateway projects envisaged in 2009, in its selection of the projects the map succeeds in showing the breadth and scale of the vision. It would be unfair to expect more of the developments to have been completed: at the outset the initiative was conceived as a fifty years strategy. The most impressive developments that have been completed, at Liverpool2 and MediaCityUK, really have changed the map.

The map is perhaps slightly less successful in demonstrating the potential of OS MasterMap data. However, overall it is an attractive product that succeeds in showing at a glance the topography and some of the projects of the Ocean Gateway in a way that would not be possible on a computer screen or a traditional publication.

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Burton-on-Trent Borough 1878 – boundary markers

Lez Watson

Burton first became a borough under Nigel, the Abbot of Burton, at the end of the twelfth century. The abbey had been established by Wulf ric Spot, Earl of Mercia in 1002. Abbot Nigel laid out the basic street plan, establishing burgages along the main street from the ‘new’ River Trent to the bridge at Horninglow. The surrounding villages remained detached from the settlement, although Abbey property.

After the dissolution of the monasteries under Henry VIII, the abbey lands passed to Sir William Paget in 1546. The development of the brewing industry gave rise to a sizable population for the town and outlying villages of 9,768 in 1851, of whom more than a thousand were brewery workers. Parliamentary Acts were passed in 1698, 1779, and 1853 to enable improved administration of the town; a further act of 1878 relates to the subject of the newly established boundary discussed here. This date also saw the inclusion of Winshill and Stapenhill into the borough. Branston and Stretton remained separate parishes.

Cast iron posts were erected at the intersection of the boundary with all the roads, tracks and paths exiting the town (figure 2). Each post stood three feet (0.92m) from the ground and each is of five-inch (12cm) square section, with a pyramidal cap measuring six-and-a-half inches (16 cm) square (figure 1). Made in cast iron by Philip Halbard of the Britannia Foundry, each one carried the same legend, ‘BURTON UPON TRENT – BOROUGH BOUNDARY’, on two lines, with the makers details at the base. Given their location when placed, they would have been seen easily by travellers.

The posts today

I undertook a survey in 2015 to see how many of the posts survived by consulting large scale Ordnance Survey and locally published mapping, creating

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1 He served from 1094 to 1114. Formerly of Winchester, he began building the west end of the church.
4 Colin C Owen, Burton upon Trent. The Illustrated History, 1994.
5 For the incorporation of the town as a Municipal Borough, later to become a County Borough (1901 to 1974).
7 with the exception of boundary stone no.19.
8 ‘Britannia foundry in Horninglow Street was established by Philip Halbard and Joseph Wright in 1850. The business was failing by 1870, and the foundry had evidently been closed by 1879.’ In Tringham (see fn 6).
9 1:2,500 scale County Series sheets: Staffordshire XL.8, XL.11, XL.12, XL.15, XII.9, XII.13; and Derbyshire LVII.9, LVII.14, LIX.4, LX.1. Also 10,000 National Grid Series, 1:25,000 First Series, and East Staffordshire website mapping (OS).
a table with the results numbered clockwise from the River Trent south end of the town. My curiosity was aroused by the inconstant depiction of the markers on successive OS editions at all published scales.

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10 I have not sought any unpublished sources.

11 The table in this article is an abstract from a detailed spreadsheet of all the information available to me (see note 9).
The first post (number 1, figure 2) is on the B5018, next to 139 Branston Road against the northern edge of Burton to Leicester line railway property. Although the Roman Ryknild Street was no longer a thoroughfare in the Victorian period, and had been superseded by Branston Road – the mediaeval Broadway – it would still have been a noticeable landmark on the boundary. I assigned this location the marker number 2 on the above map nonetheless.

Post number 3 was on the track to Tatenhill, with number 4 leading to Sinai House. Both are missing, now being within Branston Locks housing development. Post number 5, also missing, lay by Shobnall Brook (alongside the B5017).

Post number 6 (figure 3) on the track/footpath to Anslow is hidden in the bushes by the hedgerow. Post number 7, leading to Upper Outwoods, was visible until a few years ago but was lost during work at the nearby hospital. Numbers 8 and 9 were probably removed as a result of housebuilding. Number 9 stood by Horninglow Brook, the post probably moved from GR 2332 2542. The most visible of the entire series stands in Tutbury Road by the bridge over the brook (number 10, figure 4). Today painted white, but with the characters un-highlighted, it can be seen from some distance along the A5111.\(^1\)

Rolleston road, post number 11 (figure 5) is set in a low wall, but not in its original position, which was on the west side of the road. The culverted brook then leads to post number 12 which, due to landscaping and the burying of the watercourse, now stands alone in Horninglow recreation park (figure 6).

Further along the Horninglow Brook, posts numbers 13 and 14, by footpaths to Stretton and by Derby road, are both missing. Post number 14 was removed following construction of the Burton to Tutbury railway line,\(^2\) and, post number 15 by Horninglow Brook was removed during culverting work below Derby Road.

\(^1\) [www.geograph.org.uk/photo/3987097](http://www.geograph.org.uk/photo/3987097).

\(^2\) The North Staffordshire Railway, known locally as the ‘Jinny’ line.
The next post is to the east of the Trent in front of a garden wall by the B5008, near Dale Brook (number 16, figure 7). Posts numbers 17 and 18 by the lanes to Bladon Hill and Bretby are missing, probably removed during house building. Marker number 19, a parish boundary stone by the lane to Common Farm, is also missing, as is post number 20, removed during housing work. Post number 21 is located on Ashby road, A5111, (figure 8) by the hedgerow.

There is no trace of boundary post number 22 in Brizlincote Lane, it having been removed in 2017 and re-erected at a nearby private location. There is, however, a photograph on the Geograph website (figure 9). A little further down the hillside the municipal boundary joined the Brizlincote Brook where it crossed over to Stapenhill.

There are no further boundary markers from this point back to the River Trent at Waterside (see below). Construction of the Burton to Leicester railway through south Derbyshire in 1848 bisected the parish, leaving the rural part south to the Ryle Brook by Mares Yard Bridge cut off from the town.

Between posts numbers 22 and 23 are six posts (A-F) shown on OS 1:10 000 and 1:25 000 published mapping in the 1970s and 1980s. Although not relevant to this study, they nonetheless represent one of many boundary changes in 20th century Burton.

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15 Probably an estate or parish boundary post of medieval or post-medieval date. It is depicted on OS County Series mapping.
18 “When the municipal borough was created in 1878, the rest of Burton Extra (274 a.) was added, along with a further 840 a. from Horninglow, 25 a. from Branston, and parts of Stapenhill (769 a.) and Winshill (607 a.)” ‘Burton-upon-Trent: Administrative areas’, in A History of the County of Stafford: Volume 9, Nigel J Tringham (ed.), London, 2003, p. 22.
Post number 23 is not depicted on any of the OS maps I consulted, but most probably existed due to the presence of a well-trodden track to Newhall crossing the county boundary at this point. Another, on Stanton Road (A444, number 23), was probably removed during council house building.

It is possible, but unlikely, that there were two further posts (nos. 25 and 26), as the edge of the Burton to Leicester Line railway property de facto defined the borough boundary at these points.20

**Discussion**

I walked about a mile as a child to school in the 1960s. Half way along my route the road passed over the local brook by which stood an old metal boundary post. Although it was rusty, unkempt and dirty, I could just make out the the lettering. It was exactly half-way between home and school; I wondered if it might be more than a coincidence. The survey I undertook recently indicated, as I had suspected, that the post survived along with only a few others that had originally encircled the town. The remaining posts exist due to having been unaffected by later agricultural activities, settlement encroachment or theft.

The boundary markers were commissioned in the 1870s as a visible expression of municipal pride. Earlier town expansion and town limit change had been depicted on maps commissioned by land owners and borough officials since the mid-eighteenth century.21 The *Plan of the town of Burton upon Trent in the County of Stafford, 1836* by Thomas Spooner depicts the built-up environment at that time with special attention given to the ward and borough bounds created in 1853.22 At his date the western borough limit ran alongside the Trent and Mersey Canal from south of Shobnall Road to just north of Horninglow Wharf. The eastern limit rang along the eastern arm of the Trent.

The 1860s to 1880s saw a dramatic increase in house building across the town, spreading further west towards the Needwood bluffs and spilling into the villages of Winshill and Stapenhill. The built-up elements of these settlements soon became incorporated into the borough in 1878. The Ordnance Survey 1:2,500 scale Staffordshire County Series sheets of the town show further expansion.23 Construction of the North Staffordshire Railway branch to Hatton and Derby removed marker number 14, and reduced the significance of the lane/path to Stretton.

The existence of the posts is not mentioned in either a recently commissioned historic character assessment or parish neighbourhood plans,24 which suggests that these heritage assets are not considered of importance locally. Being unlisted monuments, they have consequently suffered the ravages of time. The local large-scale Ordnance Survey County Series plans are the only reliable source for the markers, the 1882 re-

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20 A local resident informed me that no posts were to be seen in the scrub land by the railway viaduct.

21 The earliest known example being William Wyatt’s map of the manor of Burton, 1758 to 1780, comprising nine township maps. Staffordshire Record Office, D(W)1734/2/3/131 - /140. The township boundaries may be inferred from the individual sheets. See Lez Watson, *An Historical Atlas of Horninglow Parish, Burton-on-Trent* (forthcoming).

22 An earlier map of 1847 by William Wesley includes Burton township boundary (only).

23 See fn 7.

survey having helpfully been made soon after the 1878 Act which had redrawn the boundary.

No doubt there are further examples of town and borough boundary markers. Chester has many ‘mayoral’ boundary stones from the late Victorian period, but I’m not aware of any others. The Ordnance Survey’s record of those in Burton may be a rare reference to such heritage assets.

<table>
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<td>Branston</td>
<td>-</td>
<td>Staffs</td>
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<tr>
<td>4</td>
<td>2217 2253</td>
<td>159</td>
<td>track near Lawns Farm</td>
<td>Tatenhill</td>
<td>S</td>
<td>Staffs</td>
</tr>
<tr>
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<td>8</td>
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**Riddles of the sands**

*Andrew Darling*

The alignments of the two most significant (and the most notorious) offshore walking routes in England have been presented at various times on maps produced by Ordnance Survey. Given their lethal history, and the fact that by their nature the routes are liable to be affected by the action of the sea, one might be forgiven for asking why it has ever been thought desirable to show them on ‘official’ maps. It would certainly be an extremely foolhardy walker who relied on map-reading skills alone to navigate either thoroughfare.

The routes in question are the ‘road’1 across Morecambe Bay from Kent Bank in Cumbria to Hest Bank in Lancashire; and the so-called Broomway, across the Maplin Sands in Essex. In the words of Dr Macfarlane, “They are rights of way and as such are inscribed on maps and in law, but they are also swept clean of the trace of passage twice daily by the tide. What do you call a path that is no path? A riddle? A sequence of compass bearings? A death-trap?”2

The recorded history of people walking across Morecambe Bay goes back many centuries. Until the coming of the railway in the 1850s, a trek across the sands by foot or horse drawn carriage was the only way of avoiding the lengthy and poorly maintained coastal road route. In order to reduce the many cases of drowning the first official guides to the Bay were appointed by the Crown in the 1500s, a practice which continues to this day. Cases of drowning however, still continue to occur to the inexperienced and unwary. The greatest tragedy in recent times was the death of twenty Chinese workers engaged in cockle gathering in February 2004.3

The route of the Morecambe Bay ‘road’ appears, on both sheets of the six-inch mapping of the 1840s on which it is shown, as virtually a straight line with just two or three turns. It leaves Hest Bank (*figure 2*) heading directly north, then veers to the north-west to cross the Keer Channel a short distance east of the Priest Skear Muscle Bed (*figure 3*).

On today’s OS mapping, the road appears to follow much the same course. Like the Broomway, its depiction is now accompanied by public health warnings to alert walkers to the potential for disaster: ‘Public rights of way across [Morecambe Bay/Maplin Sands] are dangerous. Seek local guidance.’

*Figure 1 (facing page) : Kent Bank and the ‘Road across the sands at low water’, from the Six-Inch Lancashire XVII, surveyed in 1847-8 ‘by Captain Bayley RE’ (NLS).*

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1 So labelled by the OS in 1845. See *figure 1*.


3 ‘Safety guidance for the organisation of public walks across the sands of Morecambe Bay’, Lancaster City Council, HM Coastguard etc, May 2016.
Figure 2: the ‘road’ heads north from Hest Bank …

Figure 3: … and crosses The Keer Channel
The route of the Broomway (officially PROW No. 16/28) is perhaps more defined and somewhat more permanent than that of the road over Morecambe Bay on today’s OS Landranger 1:50,000 series.
Sands. It takes its name from the four hundred or so ‘brooms’ that were at one time placed at intervals on either side of the track, indicating the line of somewhat firmer sand.

The six-inch maps of 1880 (surveyed in 1873) show the Broomway leaving its starting point at Wakering Stairs, north-east of Shoeburyness, and the ‘branches’ from it which led back to dry land on Foulness Island (figures 8 and 9). Until the construction of a bridge over Havengore Creek in 1922, it was the only pedestrian access to Foulness, which perhaps answers the question I posed at the beginning of this article: why was it considered desirable to show these paths at all?

Despite their potential for disaster (several hundred people have lost their lives over the centuries while crossing Morecambe Bay or Maplin Sands), the paths continue to attract walkers in large numbers. As well as considering the hazards associated with fast-moving tides, visitors to the Broomway must also take into account the fact that it falls within – and is subject to the regulations of – the Ministry of Defence, and is accessible only when the firing ranges are not being used.

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4 Macfarlane, p61.
Figures 8 & 9: start and finish of the Broomway as shown on six-inch maps surveyed in 1873 (NLS)
How low can you get?

There was an enthusiastic response to Peter Haigh’s invitation to identify the lowest point in Britain on OS maps.¹ In emails, letters and postings to the Ordnance Maps discussion group,² readers offered suggestions and information. Contributors included Bernard Anderson, David Andrews, Paul Hardy, Tony Jervis, Ashley Lawrence, Richard Oliver, Derek Persson, Alan Stromberg and David Watt; below is a distillation of their comments.

Above: The vicinity of Holme Fen, Cambridgeshire (TL 320890) on Explorer 227 with four -2 spot heights (in metres). The one in brown (top centre) is from air photos, those in black from levelling. The supposed lowest point in Britain, marked with posts in the ground, is at Holme Fen Posts.

Right: Seventh Series One-inch sheet 134, revision B has a -4 (feet) spot height south-west of Ladyseat farm.

¹ Sheetlines 117, 49.
² https://ordnancemaps.groups.io/g/main
One-inch sheet 134, revision A, (top left) has the trig point at Ramsey Mereside (TL 278896) labelled as -1 (feet); this is not labelled on revision B. However, Explorer 227 (top right) labels it as 0 (metres). This sheet has several zero contours in the vicinity; these were only introduced when metric contouring was adopted. The Soviet cartographic convention of a tick indicating the downhill side would be helpful in these cases.

Zero metre contours also appear west of Great Yarmouth on Explorer OL40 (bottom). Surprisingly, the -1 spot heights appearing at the top right and bottom left of this extract have minus signs of different lengths.
The 1949 ‘Mystery Airfields Map’ (Sheetlines 117, 48) was printed for HMSO by the Admiralty Hydrographic Office printing establishment at Taunton. ‘C.B.H.’ stands for Creech Barrow House on the Hydrographic Office site there, and denotes the ancillary press set up for letterpress and other small-format work, and in-house or repayment work for other Government departments. ‘17481’ is the HO job number; the rest of the lower left code gives the HMSO Demand and Warrant numbers, date and quantity - standard for work sent to them from other Government departments for allocation to printing works. Hydrographic Office presses were used for much such cartographic work during and after the Second World War. The likeliest source for such a job as this is, of course, Air Ministry; the lower right imprint code on such C.B.H. work is generally that of the source department, and I hope someone with a greater knowledge of late-1940s Air Ministry workings can interpret that code.

Dr Andrew S Cook
Ordnance Survey covers and titles update
Derek Deadman

Items below are those added after publication noted in Sheetlines 111 and 114.

8.3.a Double lineation. Red on white paper. Six-inch (black) town maps, 1931-34. 25 town maps. Source: Sheetlines 7, 13; Sheetlines 8, 17.

GVR Arms. Known (believed complete): Blackburn; Blackpool; Bolton, Brighton & Hove; Doncaster; Fleetwood & Cleveleys; Guildford; Halifax; Hastings; Huddersfield; Kingston upon Hull; Leicester; Middlesbrough; Norwich; Portsmouth; Preston; Rochdale; Scarborough; Shrewsbury; Southampton; Southport; Taunton; Wakefield; Weymouth; York.

Add GR Arms: Portsmouth

14.1 A31 signpost. Black on orange paper. Half-inch England and Wales/Scotland series sheets. Ministry of Transport road map. All sheets England & Wales (39 sheets) and Scotland (34 sheets) known printed with GR arms. A later printing of a number of sheets bearing ER arms is known. Add known sheets with ER arms: 6, 12, 13, 14, 25.


Add known sheets: 13, 14, 23, 47


Book-fold covers with ER Arms. Add known sheets: 46, 62


Add known hinged sheets: 8, 21, 46, 60

Bender covers. 1939-40. Add known sheet: 72


Book-fold covers. Add known sheet: 114


Add known: Aldershot (North); Maidstone and Tunbridge Wells


Add known: Blackpool & District (via an adhesive label), Ilkley District.

Bender covers. Add known: Sidmouth, Budleigh Salterton and Exmouth District;


Add known: City of Canterbury

Thanks to Graham Cornell, John Davies and Peter Gibson for their help in the preparation of this article. Remaining errors are those of the author.
Kerry musings

David Archer

An Englishman's home is his castle, and in my book castles are places people like to look around. Why are we fascinated by other people's houses? And seem always to have been? A glance at Paterson's Roads (fifteenth edition 1811) or Cary's New itinerary (fifth edition 1812) shows that amongst the information given to travellers, are details of which large houses one passed on a road: 'Hales Owen. Before, on I, the Leasowes, – Hamilton, Esq. Leasowes was the seat of the Poet Shenstone, in the decoration of which his whole fortune was spent'. Why would one want or need to know this? Why not just say a large house, or a large red house? Whilst most houseowners would almost certainly be pleased to be singled out as living in a house worthy of mention, those passing might be envious or look down their noses at what they saw. I always chuckle when I hear someone very snobbishly refer to something as second-hand, as by implication it would be nothing they would ever dream of having. And then they return to their second-hand home full of second-hand furniture, but called a manor house with antiques. Indeed, the more times certain properties have changed hands, the more 'desirable' they become in some people's eyes. Have you ever heard anyone say they have bought a second-hand house, but only until they can afford a new one? Look at almost any Ordnance Survey map and most of the houses shown will not be occupied by first time buyers; if you go back through the map series, the same properties will keep appearing.

Yes, owners of older houses have always been pleased to have them pointed out, and to invite others to view them. In Pride and Prejudice (1813) and Bleak House (1853) it is accepted that one can call at a large house and be shown around by the servants if the family are away. It was a popular pastime, and still one that many people like, which is why the National Trust thrives. When visiting friends for the first time, one is so often invited to see around the house. We just seem to like a good nose and to show off our properties, however humble.

The Ordnance Survey has always appreciated this and likes to plaster maps with house and building names, but why not just show the building without the name? Ignoring the fact that maps would then look pretty empty, echoing the problem with early Irish maps. Is it a hangover from when the first OS maps appeared and it was thought that the gentry would be good customers; more so if their properties were not only shown, but named as well? I cannot find anything written on the subject, but for named houses on Old Series maps, my money is on there having been few large signs at the gates saying: Opulent House, residence of Sir Swiggly Diggly. So it cannot be argued that showing such piles was an aid to navigation by map. Although there are more signs today, few areas compare with south-west Scotland, where almost every farm has its name on a sign at the road end. Much less so these days, but a tremendous help before Sat-Nav appeared. If owners of large properties were pleased to see their houses named on the new one-inch Ordnance Survey map, they might also have been more than a little peeved. Yes, their house was shown and named, but so also was the very small farm just down the road, quite possibly one of their farms. Why should an impoverished tenant farmer have the same status on an OS map as themselves? The same small black rectangle for a building, with the same size and style of lettering for the name.
Of course it is often quite useful to have a house or other building both named and easily identifiable on a map. When I worked in London and announced that I was moving to Wales, a colleague darted off and returned with Seventh Series sheet 128, wanting to see exactly where we were moving to. Although our house was not named, the hamlet was, and our new home was recognisable as a dot within the hamlet. My colleague was delighted to see something so specific, even if so small. A few years ago, a leaflet was received from our local fire brigade with a brief description of the National Grid and a request to have a grid reference kept by the telephone to give in an emergency. Very sensible and useful in a rural setting. Even if the grid reference is not very accurate they should be in the correct area, and anyway, flames will help draw them in the dark. Yes, a National Grid reference is an excellent idea, but how many of our members have the confidence to use it? To give it as the only extra aid in getting to a location along with the address? We have always had our grid reference on our notepaper, but if someone is coming, even ‘map people’, I always send them detailed instructions on how to find us if coming by road from any direction. I can never bring myself just to give : white house by the bridge, SO 155 891.

Until I started this piece, I had never considered how much house names add to a map; they give a flavour not only of the landscape, but also indicate who might have lived in the houses named and can help identify them as Welsh or English. The house names of Yorkshire are totally different from Kent or Wales. In the very English Yorkshire dales we find High Hollins and Low Hollins, but around English/Welsh Painscastle the equivalent are Upper Llandewi and Lower Llandewi, with Nantcyll-uchaf and Nantcyll isaf in very Welsh north Wales. But more than this, names describe the landscape. Another Welsh example comes from west of Erwood, where one can follow the course of a stream, Nant Gwenddwr, without seeing its very thin blue line on a map. In the very upper reaches we have Blaen Gwenddwr, then Cwm Gwenddwr, the village of Gwenddwr and finally Abergwenddwr. If this stream ceased to flow, the names would show conclusively that it had existed and its course. The two place names Erwood and Gwenddwr in close proximity are indicative of the Welsh/English history of the area.

The whole subject of which names appear on OS maps is fascinating, and certainly reflects changing urban and rural landscapes over time, just as much as new transport routes or urban expansion does. Names come and go, reflecting changes in society, and changes in Ordnance Survey practice, as shown on the maps and internal instruction documents. Who now would be able to say exactly what was meant by Assembly Rooms, Beer Houses, Institutes, Meeting Houses, Mission Halls, Poor Law Institutions, Salmon Catches, Timber Ponds? Most might give the flavour of them, but nothing approaching an exact definition.

If I owned a larger country mansion, I am pretty sure that I would not want to see it named on an OS map, certainly not in full, especially if it was identified as such by, Hall, House, Palace, Towers and so on. I would seek anonymity. Why? Well, as Mr Trump, would say, “There are some bad men about”. Bad men who steal things, and who might have been quite good in geography lessons and learnt the usefulness of OS maps. Studying Ordnance Survey maps helps identify which
properties it might just be worth visiting with a jemmy, torch and striped jumper. They also show possible access and escape routes, hiding places and all sorts of things that the uninitiated would not think of. I wonder whether one can ask the OS not to include a house name? If they will not, could one copyright it and forbid them to? Which leads on to what is not shown on maps, but that can wait until another time.

As with Old Series maps, the bad men would not get much to help identify interesting properties from the 1:50,000 maps, but the larger scales are a very good source of information, and always have been. I have just been looking at some Cheshire 1:2500 First Edition maps with the lovely hand colouring, and these show a lot of detail. Plenty of promising names such as Wadesgreen Hall, Eardwick Hall, Elton Hall and Twemlow Hall, but with small and dull looking grounds. Grandeur in name only. The size of lettering does vary on these maps, so that Cranage Hall is larger than Cotton Hall, and as befits a larger name, it has Cranage Lodge and Manor farm across the road, and might be worth a visit. Flicking through a few sheets further on, Brereton Hall, north of St Oswald’s Church caught my eye as it had extensive grounds and was written in Gothic lettering. To the west of it and quite large is Dairyhouse Farm, with The Rectory south of it. Nothing unusual except the script, but when I looked on Google maps only the church was named, with the road from the village being protected by having to pass under an arched lodge; all roads to these properties were private, with street view unavailable. Someone values their privacy.

Having significant buildings named on easily accessible small scale maps is good for governments in times of social unrest, as they can be identified quickly and ‘steps taken’. This also applies to foreign governments. In preparation for Operation Sea Lion, the planned invasion of Britain, the Germans assembled a vast amount of information, including OS maps. Ordnance Survey six-inch maps for over 140 towns were enlarged to 1:10,000, modified, printed in soft brown rather than black, and overprinted with coloured symbols identifying sites of military significance such as airports, railway workshops, docks, bridges, and so on. Anyone looking at them can see that if the invasion had occurred, these maps would have helped considerably, and control would have been taken swiftly. Similar material was prepared by the Soviet Union in the late twentieth century, though I have never seen such extensive coverage of other countries compiled by the British military.

Although I would not wish the full name of my grand house to be splashed across an OS map, there are times when I would appreciate more than an abbreviated building name, something the Ordnance Survey has been prepared to use. In the 1908 Instructions to draftsmen & plan examiners, we read that they would allow the word ‘lunatic’ to be omitted from COUNTY LUNATIC ASYLUM if the authorities objected to its use. Walking past a large building marked only as COUNTY ASYLUM on my OS map, I for one would appreciate being alerted to the background of anyone seen climbing over a wall and running towards me.
Reservoirs: solution and solvers

The reservoirs depicted in the April puzzle are:

Audenshaw  Barnacre  Blackmoorfoot  Catcleugh
Cheddar  Craigmaddie  Eccup  Edgbaston
Fewston  Island Barn  Kinder  Ladybower
Llyn Elsi  Monikie  Pitsford Water  Redmires
Rutland Water  Scammonden  Stanely  Tanygrisiau

Several solvers commented that Edgbaston caused pause for thought, as they knew it (and many maps name it) as Rotten Park. Bill Henwood noted that this was the earliest (1829), Rutland Water (1975) the latest, and that ten were built in the 19th century, ten in the 20th.

The winner’s name out of the hat was XXXX; other successful solvers were: Peter Addiscott (who also submitted the correct solution to the Christmas quiz, but whose name was accidentally omitted from the report in Sheetlines 117), Andrew Barton, Martin Henderson, Bill Henwood, Philip Heselton, Roger Holden, Paul Jackson, Phil Pearson, David Purchase, Jonathan Roberts, Michael Spencer, Peter Strugnell, Andrew Turnbull, Tony Walduck, David L Walker, Keith Warman, Richard & Anne Wilson.

August puzzle – lost bus stations (mostly)

The bus station symbol first appeared on OS one-inch maps with the introduction of the Seventh Series in the early 1950s. This was about the time of peak bus usage, before the private car changed the nation’s travel habits. Richard Oliver gives a brief account of the introduction of the symbol in the April 2016 issue of Sheetlines.

Overleaf are twenty extracts from Seventh Series sheets, each showing one or two such symbols. Almost all of these bus stations are missing on modern Landranger mapping, either because they no longer exist or are evidently no longer considered to be significant.

We invite you to name the towns or cities depicted, which are arranged alphabetically. Answers to the editor before 30 October for the usual book prize to the solver whose name is pulled from the hat on that date. Could be tricky – partial answers will be accepted!


1 Sheetlines 105, 43, available at https://www.charlesclosesociety.org/SheetlinesArchive
2 reproduced from National Library of Scotland website, with kind thanks,
Where were these bus stations?
(see previous page)