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

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The Charles Close Society was founded in 1980 to bring together all those with an interest in the maps and history of the Ordnance Survey of Great Britain and its counterparts in the island of Ireland. The Society takes its name from Colonel Sir Charles Arden-Close, OS Director General from 1911 to 1922, and initiator of many of the maps now sought after by collectors.

The Society publishes a wide range of books and booklets on historic OS map series and its journal, Sheetlines, is recognised internationally for its specialist articles on Ordnance Survey-related topics.
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Forthcoming events and other news

Below is the programme for Autumn 2007. For further information or to book your place, email visits@charlesclosesociety.org.uk or call John Davies on 020 8504 1766.

Wednesday 19 September, St Ives, Cambridgeshire

Continuing our series of visits investigating modern commercial cartography, we are the guests of Imray, Laurie, Norie and Wilson, the leading publishers of nautical charts and books covering coastal waters and inland waterways.

Friday - Sunday, 5 - 7 October, Whitby, North Yorkshire

The social event of the year to which members are invited to bring partners. This is a residential weekend comprising visits to local attractions and talks on topics of general interest together with comfortable accommodation, good food and stimulating conversation. Cost will be about £140.

Tuesday 13 November, Cambridge

We visit The GeoInformation Group, one of Europe’s leading providers of high-resolution aerial photography and satellite imagery products and services. These include Cities Revealed, Counties Revealed, Countries Revealed, along with a range of value added data such as 3D building data, land use and historical images.

The 2008 programme is now being compiled. As before, this will consist of day visits in various parts of the country, an occasional weekend away and an overseas trip. If you wish to suggest a venue for a visit, please contact John Davies as above.

Annual general meetings, 2007 and 2008

The well-attended 2007 AGM took place at Ordnance Survey, Southampton, on 19 May. OS gave us a warm welcome to their HQ and we are most grateful to them for their liberal hospitality throughout the day. Richard Oliver’s thought-provoking address, ‘Why the Ordnance Survey needs its history’ will form the basis of a paper in a future issue of Sheetlines. As usual, the minutes of the formal business meeting and the annual accounts will be found in the Almanack accompanying this issue.
In addition to the usual map market in the afternoon, members made good use of a generous staff discount in the OS map shop.

The Society has been invited by John King, one of our members, to hold the next AGM at Tiffin School, Kingston upon Thames, on Saturday, 17 May 2008. Several members have been asking when we were going to return to London for an AGM and there are many advantages in this location. The Committee will be asked to accept this invitation at its next meeting.

**Cambridge Seminars In The History Of Cartography**

This is a preliminary announcement that the next seminars will be as follows:

- 30 October 2007: David Beckingham on drink maps of Liverpool
- 11 March 2008: Nick Baron on Soviet civil inter-war mapping
- 6 May 2008: Tom Koch on maps of disease

All seminars take place at 5.30 p.m. in the Harrods Room, Emmanuel College, St Andrew’s Street, Cambridge. Refreshments will be available after each seminar. For further information see [http://www.lib.cam.ac.uk/deptserv/maps/camsem.html](http://www.lib.cam.ac.uk/deptserv/maps/camsem.html) or telephone Sarah Bendall on 01223 330476.

**Access to the Charles Close Society Archives**

Members are reminded that the Map Department of Cambridge University Library, largely untouched since the Library opened in 1934, is currently being refurbished. The Department, which houses the Charles Close Society Archives, will occupy temporary accommodation in the south end of the West Room at least until the end of March 2008.

CCS Archive material will still be available, but the Department will require at least 24 hours notice to retrieve some items. Please ring 01223 333041 to check accessibility. See [http://www.lib.cam.ac.uk/deptserv/maps/refurb.html](http://www.lib.cam.ac.uk/deptserv/maps/refurb.html) for more information.

**Ordnance Survey moves ahead**

OS have signed the building contract for the new headquarters at Adanac Park. The impact of IT in reducing the staff needed to make a map was brought home to those of us who visited Scotland and Slovenia. OS staff numbers in Southampton have been reduced by over 60% since the present headquarters opened in 1969, and members attending the AGM should not have been surprised to see so much of the site leased out to other organisations.

Ordnance Survey have also announced the withdrawal of *Land-Line* mapping on 30 September 2008 as customers move to *OS MasterMap*. In the public consultation a third of respondents said they would continue to require access to their own archive of *Land-Line* data after withdrawal and OS will provide appropriate licences for that.

However, will the historian of 2107 still have the technology to access today’s *Land-Line* or, indeed, *MasterMap* data?
Visit to Landmark Information Group’s Exeter Offices

Ken Hollamby

In our work as consulting archaeologists we often receive Landmark Envirocheck map packs from clients. Our company in Newark, Nottinghamshire, was recently bought by CgMs Consulting and we now have access to Landmark products, so I was particularly interested when the visit to Landmark Information Group at Exeter was announced.

My wife and I stayed at the Raffles Hotel in Exeter, restored to its Victorian magnificence. When I asked the proprietor about the very fine nineteenth century map of Exeter on the entrance hall wall, he said that one Rodney Leary, on an earlier visit, had commented that there were no maps on display, and would I tell him that the situation had been corrected.

On 22 March, eleven members of the Society gathered at Landmark’s Exeter offices located on an industrial estate close to the M5 Exeter junction. We were greeted by Craig Wheeler, the Project Manager responsible for research and product development, and his colleagues Martyn Lufkin and Matt Wills. Landmark provides digital datasets to professional clients who need environmental, planning and mapping information. Their services are only available through consultants, architects, solicitors and similar professional users as Landmark do not provide any analysis of the data. They have main offices at Exeter and Henley-on-Thames and a smaller one at Bromley. Henley concentrates on sales and marketing; Exeter on product development, computing and the delivery of services to their clients.

Landmark is part of the Daily Mail Group and developed to provide commercial environmental and planning reports. Over the years their services have extended to include site reports for residential developments, reports on underground utilities, flood maps, geology reports, aerial photographs and historic map packs. They work closely with Ordnance Survey, the British Geological Survey, the Environment Agency, The Coal Authority and similar organisations that originate map based information. They have digitised around one million OS maps including many that have not previously been available. They capture every planning application, around 15,000 each week. All of the data on the digitised OS maps is geo-referenced. This work was done in New Delhi where five Landmark staff trained 150 Indian staff to carry out the analysis.

After the introductory talk we had a tour of the building, in particular visiting the computer and production departments where the data is stored, customer requests processed and printed and digital reports produced. Around 95% of Landmark business is site centered reports. They have 250 staff over the three locations.

The company is totally dependent on computer-based data. Your editor, until a few years ago a computing service manager, was very impressed by the well-organized network monitoring tools on display, and the explanation by Pete Selhurst of the company’s strategies to ensure constant availability of this data and to protect it from accidental loss.

The walk round was followed by further presentations. The first talk by Craig Wheeler covered the technical aspects of data collection, verification, quality control and product development. Landmark goes to great lengths to ensure the integrity of the data provided to clients. This is particularly critical when dealing with the potential for land and buildings to be contaminated. The historical OS maps are overlaid with the National Grid to enable
comparisons to be made with modern maps. Of particular interest to CCS members is the inclusion of Russian mapping in the service. Other development areas include tithe maps, enclosure maps and non-OS historic mapping. As an archaeologist I could see the potential for these new services but, as was explained, Landmark is a commercial organisation and can only justify developing services that clients will pay for.

The next presentation was by Martyn Lufkin who described the Goad Fire Insurance maps. These were produced by the Charles E Goad company from 1885 to 1970, at a scale of one inch to forty feet. The maps cover areas in towns and cities with the highest fire risk and contain details of construction and use not available elsewhere. Goad rented these maps to the insurance companies and revised them every two or three years. The revisions were by pasted-on amendment slips and the maps were replaced when they became too thick to handle comfortably. Goad used fold-over edge flaps when the mapped area was expanded. All this means that they are difficult to handle and use. Landmark has scanned 7,000 maps which is 85 - 90% of those issued. All of the maps are geo-referenced but at the time of the visit were not available on-line. They will be an invaluable resource when Landmark adds them to their services.

The final presentation by Martin Wills covered Landmark’s historic map service and how the analysis of historic maps can be used to identify hazards relating to historic industries. There may be mercury contamination on sites previously occupied by hatters, oil pollution on old service station sites or unexploded bombs on sites highlighted on bomb damage maps. The analysis of old mining sites is about to be released. Landmark staff are currently working on the listed building dataset which they expect to be incorporated into their system in about eighteen months time.

The staff at Landmark gave the CCS team an excellent insight into what is possible using the current state of digital technology. Before the Internet and cheap processing researchers had to visit libraries, record offices and archives to retrieve a fraction of the data available today from the comfort of an office. The sophisticated systems and techniques employed by Landmark Information Group turn this data into valuable information. More details can be found on their website, www.landmarkinfo.co.uk.

Craig Wheeler said that they are always keen to investigate new sources of mapping data and Landmark Information Group now has a copy of Historic Town Plans of Lincoln 1610 - 1920 jointly edited by our secretary, Rob Wheeler. Rob’s next book Maps of the Witham Fens 13th - 19th Centuries will be published in June 2008 and details of the special offer will be in the next edition of Sheetlines.

Visit to Snowflake Software

John Davies

This visit, on 18 May, was a real eye-opener to those who think of maps as colourful pieces of paper found in second-hand bookshops! Here was a vivid demonstration of the power of digital maps and the tools available to view and exploit them.

Eddie Curtis, co-founder and Chief Technical Officer, explained that when somebody buys OS MasterMap, what they actually get is a computer-readable file of 450 million
objects, organised into ‘layers’. What Snowflake offer to their customers – typically central or local government authorities and agencies, utility companies and so on – is the means to turn this vast data repository into meaningful information to support their business objectives.

Snowflake have three main products: Go Viewer, Go Loader and Go Publisher. Go Viewer, freely downloadable from the website at www.snowflakesoftware.co.uk, portrays MasterMap data visually as on-screen mapping, allowing layers to be selected and zooming to any scale.

Go Loader and Go Publisher enable the user to maintain an Oracle database comprising selected data from OS MasterMap together with any other compatible data. This lets an organisation integrate its own information (such as pipe or cable runs, in the case of a utility company) into a comprehensive map and to produce this is a variety of formats for planning, operational and display purposes.

The software adheres to international standards, XML and GML, thus not only OS mapping but any conforming spatial data can be accommodated and Snowflake are actively engaged in a number of Europe-wide initiatives. We were given a glimpse of an exciting new product, ‘City GML’ which combines CAD and GIS technologies to produce three-dimensional perspective images of cityscapes. This has huge potential for such applications as telecommunications, city planning, disaster recovery, noise mapping, simulators and vehicle navigation.

Founded in 2001, now with a staff of eight, Snowflake is a shining example of a small, innovative company moving swiftly forward to exploit new technologies to create new opportunities.
Charles Close Society Scotland Tour
Gerry Zierler

A dozen or so members from all over Britain assembled in Edinburgh on Thursday, 19 April for a three-day tour of map firms and the National Library, organised by John Davies. The weather proved kind, and some of the dining proved excellent. In particular, the splendid Scottish fare at Dubh Prais in Edinburgh High Street is worth recommending! Despite the whisky and the hour the night before, members made their way early on the Friday by train to Stirling for the first of their trio of visits.

Stirling Surveys

We were greeted at their small and modern trading-estate premises by Stirling’s managing director, David Barbour, with founders Pat Blashill and Steve Barrett, and designer Nathan Stevens.

Now in their twentieth year, Stirling produce Footprint Maps. We saw the original process for mapmaking, using stereo pairs. For Scotland, 1988 photography was used because it was pre-tree cover. Air photos allowed the plotting of subtleties of shape between the contours. We were shown the interesting contrast between the original processes (drawing / colouring layers / use of Scribecoat etc.) with today’s entirely digital production processes.

Originally specialising in maps for orienteering, the founders’ own favourite sport, several BCS awards have been won for outstanding work in map design. The firm soon went into walking maps too. The first was the West Highland Way in 1988, using a German waterproof paper. 1927 out-of-copyright OS maps were used as the basis: one-inch Populars, six-inch and some 1:25,000. One day’s walk checking the map results in two weeks’ work in the office!

Stirling Surveys’ first cycling map, for Sustrans, was in 1995, the C2C map of Cumbria to Newcastle. Sustrans maps now cover the whole country, with thirty titles. Their work on long-distance paths has developed into localised maps too, e.g. for Stirling itself, with guides for a number of Scottish areas plus the English Lake District. Only three maps had been discontinued during their twenty years including, somewhat surprisingly, that for the Ridgeway.

We were grateful to the small team at Stirling Surveys for an interesting visit to a successful and very enthusiastic specialist firm.

Harvey Maps

Our second visit was to Doune, a small town in beautiful country some ten miles from Stirling and home of Harvey Maps, where we were greeted and shown around their four hundred year old premises by founder Robin Harvey.

Harvey started thirty years ago, producing orienteering and walking maps, originally at a scale of 1:40,000 – felt to be a good compromise – and later at 1:25,000 for the Superwalker series. More recently, Harvey has produced the British Mountain Maps series with the BMC, also at 1:40,000. We heard of interesting policy changes in colouring over the years – light green in place of yellow for farmland, for example, now the reverse of OS colouring using pale yellow for access land. Right from the start, Harvey Maps used aerial photography –
originally OS material – and original photogrammetry. All maps are on waterproof paper, and BMC maps are tearproof too.

Harvey now have a range of route maps – steadily covering National Trails and most National Parks. BMC maps of Snowdonia, the Lakes, Peak District and, soon, Glencoe are backed with BGS geological maps in 3D. Also covered is the South West Coast Path in six sections, and three maps of Ireland, as well as cycling and local town plans.

All Harvey maps are now printed outside, but originally they did their own A2 work. We saw a Wilt A8 press (ex Danish Survey) and a Galileo Stereo Simplex G6, used for plotting contours digitally. Harvey’s was non-GIS, Robin explained, because their interest was in making data easy to read and understand. Adobe Illustrator 8 was used, though versions 9, 10 and CS2 were also available.

Although Harvey’s biggest business was now via the Internet, CCS members showed their appreciation, and helped to reverse this trend, after their tour by carrying away considerable amounts of Harvey’s excellent range, including maps, atlases and even jigsaws.

National Library Of Scotland

The final official visit of the CCS tour was on Saturday morning to NLS at Causewayside in Edinburgh, where we were treated by map collections manager Diana Webster to a special display of items from the considerable Bartholomew archive.

Edinburgh’s famous firm of John Bartholomew (& Son) was founded in1826 by John Bartholomew the first, a jobbing engraver. All generations of Bartholomews had links with German and Swiss cartographers, and the bust of John Junior’s mentor August Petermann from Justus Perthes in Gotha was much in evidence.

There were not only many fascinating Bartholomew maps on display. Many unique and fascinating items had also been brought out for CCS members, including a set of engraving tools not only used but also made by a Bartholomew apprentice in the 1930s. A recent and expensive acquisition was a beautiful paperweight made of Mauchline Ware from Ayrshire, featuring a map of the Americas, for which Bartholomew had produced the right-side engraving for transfer by paper to the pottery.

A tour of the depths of NLS showed how huge the Bartholomew archive is. Rows of map presses and many shelves were taken up by – who knows what? Much of the material is yet to be catalogued in detail.

Although not quite the end of the visit to Edinburgh for some members, the 2007 CCS tour of Scotland concluded by thanking Diana Webster for her enormous generosity and effort in preparing a fascinating display.
John Dennett’s papers

David Archer

Archives are wonderful places. Behind the search room are shelves and shelves of brown boxes, each containing ‘papers’. Sometimes the papers concern a family, a company or an estate: large groups of papers and single sale documents that have been considered worthy of preservation. Over time, various single documents are drawn together in the catalogue and form a useful collection on a subject. Although the Charles Close Society archive is small and in its infancy, it already has some valuable and interesting items, to which more will be donated in the future.

I was recently offered some personal material that I would struggle to find a home for, yet it was too interesting to cast aside, and the owner readily agreed that it should be offered to our archives, and was accepted. In time, one hopes that it will help to answer questions about the OS and will expand the embryonic personnel section. The few papers are those of Mr J R B Dennett MBE, who retired from a senior post within the Ordnance Survey on 31 December 1972, after over 44 years service.

A letter from Bassett, Stanton & Co., Solicitors, Southampton, supports John Dennett’s application for a post as a ‘Scheme A’ boy in 1928. He was “an extremely nice and well-behaved boy” and “is also a hard-working and intelligent boy and one who would, in my opinion, do very well in your department”. John got the job and was employed on twelve-inch drawing in the Reduction Department until 1930, when he enlisted into the Corps of Royal Engineers. A brief career résumé is given in another paper, and we can follow his progress as a topo. draughtsman in Egypt, returning as a draughtsman on the 25” county
series revision, and later as a field reviser until 1939. After war service, including a spell at Survey Training Centre RE on trig. instruction, John rejoined the OS as a large scales draughtsman, and from 1959 was Superintendent Large Scales Control until 1969, when he became Superintendent Planning and Control, the highest ranking officer in the Planning and Control Branch of OSHQ, receiving an MBE in 1970. An MBE for services to the Ordnance Survey, who took him on as a bright boy, and trained him for higher things.

A retirement thank you letter from the DG, Major-General B St G Irwin, and a couple of in-house retirement cards, with lots of signatures are also included. But perhaps the most interesting, yet frustrating items are the photographs. One small photograph is inscribed on the back: ‘Topography Class 1934, Portsdown’. Three others are group photographs, lacking any inscription. The first shows John as a young man with six others. All looking like heads of department. The other two are indoors, one with Christmas decorations and a fine wooden plan chest, and another, less formal shot, again with office staff in a room dominated by two plan chests. The men wear suits and ties, thick suits and pullovers, in which one would boil alive in a modern office. Who are these people? What were their jobs? As a Society, we have paid very little attention to the people who produced the maps, even though the Society is named after one. Perhaps we can put the photographs onto our website and some names might be found. Maybe a few ex-OS members remember John and can jot down a memoir to accompany the papers.

John Dennett had a store of OS tales that are now mostly lost, such as the first high chair for a grandchild being fashioned from a redundant drawing office stool, or information that imperfect and old glass plates were taken beyond the Isle of Wight in ‘open bottomed’ barges and dumped. Such tales seldom get into official histories, and although we have sought them in the past, perhaps we should make a greater effort to seek out and record such information.

The society is grateful to Mr Dennett’s daughter, Diana Hicks, for donating her father’s papers to our archives.
Thumbnail sketches on one-inch map covers from 1945

Part 2. The later sketch maps on New Popular covers

K S Andrews

In part 1 of this article, which dealt with the first wave of sketch maps on New Popular covers, four types were identified.1 The initial sketches on the eleven hand-lettered Ellis Martin covers had a 3-box frame, with sheet 161 having small Caslon-style placenames (type 1), the other ten sheets having cover sketches with larger Caslon lettering (type 2). These sketches were retained for the subsequent letterpress covers. The remaining sheets were given cover sketches in 2-box frames, 60 with the larger Caslon placenames (type 3) and 43 with Times (type 4). The boundary between sketch types 3 and 4 was diffuse in the time dimension but geographically a zigzag line was drawn from Cardigan Bay to the Mouth of the Humber, type 4 being to the north of it. This next part of the article relates the fortunes of these 114 sketches until the New Popular Edition was withdrawn.

Early sketch map maintenance

For the printing process, as postulated in part 1, each sketch map drawing was photographed and the negative, made to the dimensions desired for the printed sketch, was applied to a chemically-coated zincographic plate to make acid-resist lines prior to etching. The negative was spoilt by this process and the drawing, if still available, would need to be photographed again if a replacement block was needed. If this method was used, this sort of maintenance would be very difficult if not impossible to detect, although there are many instances of late printings of a sketch being better impressions than previous, especially for the water-lining. With the limited number of covers available for comparison, two sheets, 82, Keswick, and 89, Lancaster & Kendal, have the only sketches seen to have been re-drawn during this first phase when groups KA2 and KA3 covers were used. These sketches were both seen in two versions. The sketch for Lancaster & Kendal may have been replaced because the eponymous Kendal and Lake Windermere were omitted at first (see figure 2). The sketches were all on the common cover variant KA3.6 but from different print runs as shown by different spacings in the layout of the title and sheet number of each pair.2 One sketch of each pair was on a cover with a price rise label, which supported the idea that it was later. It is assumed that only one sketch map block was in use for a sheet at any one time.

Sketch map standardisation

With the New Popular Edition fully issued at the end of 1947, and the covers presenting four different sketch types, at some point the OS resolved to standardise. Maybe the wartime ethos of make do and mend had faded and staff were under-employed. The second phase of sketch maps has the following characteristics.

• The sketch maps of types 1 and 2, and nearly all of type 3 were re-drawn to match those of type 4 style with Times lettering for placenames, the exception to this aspect of the standardisation process being the retention of nine type 3 Caslon-lettered sketches for south Wales and Hereford.

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1 For part 1 see Sheetlines 78, 38-42.
2 For a detailed report on New Popular cover variants, see Sheetlines 76, 14-28.
• The sheet number line on the cover was changed to sentence case, i.e. ‘SHEET XX’ became ‘Sheet XX’.
• The sheet number line was moved down to be a consistent spacing just above the sketch.
• As deduced below, the sheet number line was included on the 62 new type 4 sketch map printing blocks necessitated by the standardisation policy, presumably to reduce opportunities for error.

Although introduced together, these steps, like other cover changes, were introduced only as new batches of covers were needed for the paper, cloth and dissected versions of the sheets. The start date for the phasing-in of this standardisation process cannot be given with certainty but can be estimated by studying the evidence. An edition of sheet 169 published 7.49 was issued in cover KA2.7, an edition of sheet 180 published 5.49 had cover KA3.6 and an edition of sheet 160 published 7.49 had cover KA3.9. These are the three latest-issued dated map revisions found so far in old-style covers and represent the swansong of the ‘SHEET XX’ sheet number format. The latter half of the year 1949 is therefore a likely date for the demise of the cover groups KA2 and 3 and the introduction of standardised sketch maps with ‘Sheet XX’.

Covers with these new features begin to appear as cover group KA4 and the author has seen about half of the edition in this group, for areas randomly scattered geographically. This partial coverage indicates that the next cover change was soon under way, the principal new features being the de-emphasis of the title ‘New Popular Edition’ on the generic design, and the printing of the sheet title using a font with fewer, smaller serifs. These are the plentiful group KA5 covers. Group KA6 covers (those without ‘GR’ in the medallion) were used after the death of King George VI and are less common because the Seventh Series was being issued. A diagram is given below to illustrate the cover groups.

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Differences on the new sketches

All 62 of the type 4 sketch maps made as replacements have been compared with their predecessors. The new type 4 sketches drawn to replace types 1, 2 and 3 did not just differ by having Times lettering for the placenames. Generally speaking, they were very similar maps with substantially the same selection of placenames but, on the other hand, certain areas were heavily revised, viz. sheets 124, 126, 130 to 136 and 164 to 172.

Large urban areas

The practice of the extent of the largest urban areas being roughly represented on sketches continued. Urban areas that were not quite so large were shown with location rings but were also named with italic capitals. On the bottom rung of the hierarchy were settlements shown with location rings and named in sentence case. The boundary of London on London NW and NE remained unchanged on the new sketches but on London SW and SE it was extended. These latter two sketches were quite radically redrawn with rivers re-routed and towns relocated, downgraded or dropped in favour of others. On London SW, ‘REIGATE’ became just lowly ‘Reigate’ and ‘Sutton’ gave way to upstart ‘CROYDON’. On sheet 171, London SE, ‘TUNBRIDGE WELLS’ became ‘Royal Tunbridge Wells’, the new name used on the sheet from 1951, its regal status compensating for loss of capitalisation, ‘DARTFORD’ was reduced to ‘Dartford’ and, on the margin, ‘MAIDSTONE’, fully mapped on the adjoining sheet, was omitted. On sheet 132, Coventry and Rugby, ‘LEAMINGTON’ was corrected to ‘ROYAL LEAMINGTON SPA’. The sketch for sheet 166, Frome, was redrawn to proper sheet lines with elegant ‘BATH’ now upgraded from a location ring to a hatched large urban area. However, on sheet 156, Bristol and Stroud, ‘BATH’ still had merely a location ring, like, perversely, the larger ‘BRISTOL’ on two of the three sketches on which that city was shown. On sheet 131, ‘Birmingham’ was changed from italic capitals to upright capitals to match London, though the hatched area was drastically reduced.

Towns and villages

As noted above, some blocks of sketches were heavily revised but to list all the changes would be tiresome. The following selection may, however, be of interest.

On sheet 159, The Chilterns, ‘Henley on Thames’ became hyphenated on the new sketch but the sheet inside did not catch up by showing hyphens until revision D/ of 1957.

For sheet 165, Weston-super-Mare, ‘Burnham’ became ‘Burnham on Sea’ as recorded on all New Popular sheets.

Sheets 177 and 178 share a peculiarity. The original type 3 sketches each had an anonymous locating ring. On the type 4 replacements, these examples of terra incognita were identified as Durston and Wareham respectively.

South Wales

When the rest of the New Popular Edition was becoming standardised on type 4 sketch maps with the Times typeface for placenames, a block of covers for south Wales and Hereford mysteriously resisted change and retained its type 3 sketches with Caslon toponyms on the nine sheets 138 to 142 and 151 to 154. These covers are therefore unique in having Caslon sketches beneath a sentence case sheet number line. Of the covers needing new Times sketches, this block of nine may have been delayed until the Seventh Series cover
requirements were settled in 1950. There were two late printings in this area, published in 1951, which were for sheets 142 and 153. Richard Oliver reports on them that, in his collection, edition 1263 of sheet 142, Hereford, has a new Times sketch whereas edition 1250 of sheet 153, Swansea, retains its Caslon.  

Dol-y-gaer – the kraken exposed

The sketch maps give the impression that the placenames chosen to define the sheet were selected using criteria of relative importance tempered by a desire to give a pleasing layout. This latter consideration led to some quite obscure locations being thrust into the spotlight. The dam for the Taf Fechan reservoir was built by 1927, when the abandoned village of Dol-y-gaer disappeared beneath the waters, to be seen again only as a ruin during exceptional droughts. On the New Popular sheet 141, Brecon, it appears only as DOL-Y-GAER STA, a short platform on a single track railway with infrequent services to Brecon and Newport. Showing the village on the sketch map instead of the string of reservoirs mapped on the sheet indicates the age of the map used as a guide by the artist/cartographer. This use of a dated reference may also explain the inconsistencies of spelling between the sketches and the sheets listed in part 1. As noted in a previous article, the spelling of Welsh placenames tended to be subjective prior to standardisation.  

This, together with the Frome sketch alignment error and the placing of Rosebush on the Cardigan sketch demonstrate that the cross-checking between sketch and New Popular sheet was inadequate.

The Sheet – Sheet split

This section title exaggerates the difference but illustrates the fact that, for some reason, the sheet number lines in sentence case on the covers were not of a uniform size. Two slightly different sizes are apparent to the observant student, some being 3.0 mm high, others 2.7 mm. The larger sheet number line is apparent on covers with the 62 new sketch blocks, different print batches of the covers of a sheet retaining its characteristic dimension. The smaller sentence case sheet number line appears consistently above the 43 type 4 sketches printed using blocks made before standardisation was implemented. The nine type 3 sketches retained for south Wales and Hereford also have the smaller sheet number line lettering. The split is illustrated on an index diagram in Figure 1.

It is assumed by the author that, due to the great diversity of cover requirements, the relatively short print runs and the frequency of changes, letterpress continued to be preferred to lithography for printing sheet-specific data on the covers. Since ‘Sheet XX’ printed in point size 12 is 2.7 mm high, point size 14 is 3.4 mm and point size 13 is not generally available, it is therefore clear that the covers with ‘Sheet XX’ 3.0 mm high were not printed with moveable type but using sketch map blocks made from drawings that included the sheet number line. The block production process evidently photo-reduced ‘Sheet XX’ on the drawing to 3.0 mm which did not match any available moveable type, so, where the sketch block did not have an integral sheet number line, point size 12 moveable type was chosen as being the most suitable.

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4 Reports are welcome of any other late Times sketches in south Wales.
5 For an article on Welsh toponymy, see Sheetlines 74, 17-23.
Renewal of sketches in the north

As noted above, new sketch blocks were made for sheets 82 and 89 before standardisation. Blocks were also renewed after standardisation. The covers affected belong to a group of seven sheets in the north, 76, 82 to 84 and 88 to 90. Three different sketches have been seen for sheets 82, 84 and 89, and two for the others. The reader is referred to figure 2, where examples of sheet 89, Lancaster & Kendal are reproduced. It can be assumed that a sketch in this area beneath ‘Sheet XX’ 3.0 mm high is a replacement for an earlier version with 2.7 mm lettering.

Conclusions

Detailed study of the New Popular sketch maps has led towards the following conclusions, listed in chronological order.

1. The first sketch map was drawn for sheet 161. The lettering on the drawing for this prototype was too small when reduced to the size of the printing block.

2. The Caslon lettering was made bigger for the other Ellis Martin cover sketch maps.
3. The bold 3-box sketch frame was not liked and a calmer 2-box frame was introduced.

4. Times placename lettering was introduced for the sketches needed for an area to the north identifiable by drawing a line on a map.

5. In 1949, sketch design was standardised. Most of the old Caslon sketches were replaced with Times and ‘SHEET XX’ became ‘Sheet XX’, which was put on all new drawings and thus incorporated on new blocks.

6. For the northern area where Times-lettered blocks already existed but had no integral sheet number, ‘Sheet XX’ was set with moveable type which was slightly smaller.

7. Oddly, south Wales and Hereford retained their Caslon sketches. Hereford, and possibly others, switched to Times shortly before the Seventh Series was launched.

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Figure 2a: ‘SHEET 89’ sketch version 1

Figure 2b: Version 2 with ‘Morecambe Bay’ tilted, ‘Bowness’ replaced by ‘Windermere’ and the lake drawn. ‘Tebay’ replaced by ‘Kendal’. R. Lune not named

Figure 2c: Version 2 under ‘Sheet 89’ 2.7 mm (point size 12 moveable type)

(Figs 2c & 2d courtesy of Peter Gibson)

Figure 2d: Version 3 with ‘Windermere’ moved, the lake and Leven estuary reshaped and ‘LANCASTER’ lower. ‘Sheet 89’ 3.0 mm (integral to block)
The author apologises for the high proportion of speculation in this article but hopes the reader will charitably allow that, to quote the Danish fantasist Hans Christian Andersen, ‘out of reality are our tales of imagination fashioned’. Part 3 of this article will address the Seventh Series cover sketches of England and Wales.

The assistance and encouragement of Richard Oliver and Peter Gibson, who reported in detail on his map collection and detected the sheet number line size issue, is gratefully acknowledged. Anne Taylor and her staff at Cambridge University Library Map Room are also thanked for generous access to the Messenger and CUL collections of New Popular maps in covers.

Is Folkestone on the road to Killarney?

Rob Wheeler

Right from the very start, from Mudge’s map of Kent, the Ordnance Survey adopted the convention that bodies of water, and particularly the sea, should be shown by water-lining, lines engraved parallel to the shore but becoming more widely spaced and then vanishing altogether in the space of less than an inch.

When coloured sheets were first published by lithography, this convention was maintained, the water-lining now being in blue. That made it necessary to clean off water features from the black plate and to produce a blue plate by cleaning off all detail except the water features. The process sounds straightforward but difficulties could occur where ‘black’ features were inextricably mixed up with ‘blue’ ones. The supreme example of this was where administrative boundaries ran along a river. Deleting the boundary from the black plate along with the river and then re-drawing it was an option, but a laborious one, especially as the water-lining would also need repairing on the blue plate. An acceptable ‘fudge’ was to show boundaries within rivers in blue, thus avoiding repair work on both black and blue plates. Even so, there might be scope for confusion where, for example, a boundary ran mostly along a river with occasional slight deviations. I have the impression that the processes for dealing with this improved with time: for example on ‘Second Coloured’ sheet 287, just downstream of Edenbridge, the parish boundary between Brasted (det) and Edenbridge vanishes altogether SE of Skinners; by the Third Edition (small sheet series) this section is in blue.

Nevertheless, it had become clear that water-lining on coloured maps caused problems. When the coloured quarter-inch was introduced, and the half-inch in 1903, a new convention was introduced, of a water-tint plate, with the tint being gradually washed out as the distance from the shore increases. The technique is called vignetting and exploits a diffractive effect which is usually regarded as a nuisance. A water-tint plate would require a further pass through the press but this appeared to be thought preferable to the problems that water-lining had produced: in 1905, a water-tint was adopted for the coloured one-inch of Scotland, this
time in a more agreeable shade of blue. Coloured water-lining remained only in England & Wales – either because so much of the work had been done already, or because the greater complexity of parish boundaries there (compared to Scotland) rendered the conversion so much more daunting.

Unfortunately, the production of composite sheets threw up more problems: water-lining on one of the constituents was unlikely to join neatly with water-lining on another. That would not matter if only a river was affected, but sea was a different matter. Thus, for example, the East Kent (South) composite sheet shows no fewer than three such joins.

In March 1913, the Folkestone and Dover District sheet was published. It avoided the water-lining problems of the old East Kent (South) composite by introducing a blue water-tint (in a very delicate sky-blue). It will not have been a labour-free option because it will have been necessary to redraw submarine contours. Pwllheli and Criccieth District came out in June 1913, also with a water-tint. Now these sheets have never been regarded as belonging to the sequence of experimental sheets that starts with Killarney and carries on to the Scottish tourist maps of 1920-21. At one level, it was hardly an experiment to produce an English district sheet in a style current in Scotland for the past eight years. But it established a precedent that district sheets could be produced in a more elaborate colour scheme than their parent regular sheets. Indeed, after Folkestone, the only ordinary English district sheet to be produced was of the Staffordshire Potteries (for which a separate water tint would have served little purpose).

Now this short piece has been produced solely on the basis of published maps and the cartobibliographies published by the Society. I do not know whether the deliberations on the form of the Killarney sheet preceded or followed the deliberations on whether Folkestone should have a water-tint plate. But if Folkestone was not on the road to Killarney, I suggest it was at least on the road to Aldershot and the other experimental English district sheets.
Some comments on ‘Interpreting the 1:2500 County Series’

David Andrews

I found the article by Dennis Mills and Rob Wheeler most interesting, but it raised a few queries as I read it.

I think maybe the authors’ conclusions may have been affected by their intimate knowledge of the actual area and its buildings. I am by no means an authority on the Ordnance Survey rules for the depiction of detail in the nineteenth century, but as far as I am aware they had not been significantly changed by the time I was revising the 1:2500 County Series onto National Grid mapping in the 1960s and 1970s. If I am incorrect in this statement I welcome being corrected by more knowledgeable members.

I am able to agree with most of the conclusions that the authors reach in their interpretation of the depiction of the buildings shown on their map extract. There are however some points that I have difficulty with.

- The statement on page 46, lines 6 and 7, that a division would be shown between the single storey part of a building and any two storey part is certainly not my experience. The mapping depicts the outline of buildings at ground level (later stated to be Ground Surface Level (GSL) which was defined as the upper level of surface communication). I certainly never considered the number of storeys in deciding where to draw lines on maps, and cannot remember ever encountering any such lines on the County Series plans I revised. Divisions were however shown between different types of construction e.g. wood/brick or brick/metal or where the adjoining buildings were clearly in different occupation.

- Halfway down page 46 the authors consider the depiction of a flight of steps with a roof above. Depiction rules 3 stated that detail, (including steps), under a roofed area would not be shown. As the authors state, the depiction by the nineteenth century surveyor is correct within the rules, but in common with many other examples to be found on maps does not give a reliable impression of exactly what exists on the ground.

- The authors also dwell on the subject of temporary buildings. This has been a thorn in the detail surveyor’s side for many years. The rules dictate that ‘temporary buildings’ will not be shown on the map, a temporary building being one which is not constructed upon a permanent foundation. Therefore most buildings in allotment gardens have not been shown over the years. ‘Temporary’ classrooms in schools were also omitted for many tears, until someone in OSHQ realised that thousands of these were actually over thirty years old and had mains services connected! When does ‘temporary’ become ‘permanent’? The rules have recently been revised so that the classrooms are now to be shown on the 1:1250 and 1:2500 scale maps. Which raises a question about all the other ‘temporary’ buildings that have been omitted over the years. How old are your local allotment garden buildings?

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1 The author, a retired OS Chief Surveyor, is now an independent consultant in survey and mapping. http://www.the-expert-witness-surveyor.co.uk/
2 Sheetlines 78, 45.
The secrets of Kineton
Chris Higley

 Passing reference has been made in Sheetlines to a new Ministry of Defence policy of ‘openness’ in what can be shown on Ordnance Survey maps: “If it can be seen from the air or from the road, then it can be shown on a map”.¹ David Leigh, writing in The Guardian, reported that the Cabinet Office security policy division finally agreed to stop the ‘censorship’ of maps in March 2006. He continued, ‘during the cold war, the Ministry of Defence listed 4,800 “key points” to be deleted’.²

I am grateful to Brian Biddiscombe for introducing me to a fascinating article by Robin Jones which appeared in Heritage Railway.³ Jones writes that ‘railways have begun appearing across the face of Britain for the first time, popping up on Ordnance Survey maps where they have never been seen before’. He instances a section of track retained after closure by BR in order to serve the MoD depot at Ruddington, near Leicester and the branch serving the Royal Ordnance Factory, Bridgwater, originally omitted from the map although the bridge carrying it over the M5 was shown.

But it is the concealment and dramatic reappearance of the MoD depot at Kineton in Warwickshire which provides him with his most graphic example, and this has led me to dig out some other maps, illustrated here, in order to investigate how Ordnance Survey has depicted the area over the last eighty years or so.

Local inhabitants would always have been aware of the activities at Kineton. The extensive railway network on the base would also have been visible from the air and, latterly, from satellites. Microsoft Virtual Earth now provides readily available imagery, free of charge to your PC, of sufficient quality to show the rakes of off-lease rolling stock currently in secure storage at the site.⁴

As well as the railway line shown on Landranger maps as apparently ending in an open field, other clues have been available to the general public. This extract is taken from the British Rail system map – England & Wales South, published in 1977 by Geographia Ltd and, at the time, obtainable

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¹ Sheetlines 64, 38.
⁴ The detailed depiction of other sites, such as GCHQ, Cheltenham, is also worth a look.
1930 – everything as it should be

This 3500/30 printing of one-inch Popular Edition sheet 82 shows the landscape as it really was, with the single track Stratford and Midland Junction Railway running across the top of the extract and a mineral line coming south to the ironstone quarry at Edge Hill.

1964 – not much amiss?

In the A*/¹ edition of one-inch Seventh Series sheet 145 not much appears to have altered. Bedlam Farm has become the more acceptable Boundary Farm, with no indication of any boundary, and the mineral line now apparently stops short of the quarry. There is no hint of the large ammunition depot opened in 1942.
1979 – something funny going on?

The A edition of the 1:50,000 Second Series shows the depot area suspiciously empty. Farms have gone, the railway is closed, most of the track lifted and the remainder reduced to a siding ending in a field with no buildings or mineral workings – always a good indicator of a military site! The new settlement of Temple Herdewyke was actually built as married quarters for the Kineton base.

2007 – all is revealed!

The Landranger mapping currently available, on the OS website and elsewhere, at last shows the buildings and rail network of the base in their full glory, with Boundary Farm on the boundary!

1:50,000 extracts reduced in size.
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in good bookshops and branches of W H Smith. It does not actually say ‘Kineton secret military base’, but ‘Burton Dassett – Govt Sdg’ is pretty much of a giveaway! In the light of this, one wonders how successful government policy in keeping sites off maps was in also keeping their existence, or at least the details of their buildings, from potential foes. Perhaps more so than we might expect. The ‘secret’ Soviet 1:100,000 sheet N-30-142 of circa 1981/2, shown left, follows usual practice in continuing to show the westward course of the Stratford and Midland Junction railway as ‘dismantled’, but otherwise it copies Ordnance Survey in depicting the retained eastern section as simply terminating on the old track bed. Suspicion has not been aroused: there is no hint of the existence of the military depot and its rail network. The names Marlborough and Owlington are just transliterations of Marlborough and Owlington, the two farms marked on the OS one-inch Seventh Series.

Can we really believe that the Russians applied no real intelligence to Intelligence, or are there yet more secret Soviet maps still to be discovered?

I have not established when the ‘secret’ railways of Kineton first began to appear on Ordnance Survey maps, but security policy seems to have been relaxed to a degree some time before the abandonment of ‘censorship’ was publicly admitted. OS 1:250,000 mapping of the 1980s follows the 1:50,000 in omitting the MoD railway, but by the 1999 C edition of Travelmaster 9 a generalised outline, appropriate to the scale, is shown (right). Slightly more detail, together with the indication of a ‘danger area’ to 2400 ft, appears on the ICAO 1:500,000 aeronautical chart, sheet 2171CD, edition 28 published by the Civil Aviation Authority in 2002.

Yo Hodson has provided us with a comprehensive account of pre-war security policy and its affect on the one-inch Popular Edition. Chris Board has described security deletions on immediate post-war air photo mosaics. Has enough time now elapsed for a description of more recent security policy and the resultant ‘fudging’ of OS maps to be possible? Ideally, could someone with personal knowledge of the policy or its implementation be persuaded to write something for a future issue of Sheetlines?

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5 The other ‘Govt Sdgs’ shown here were at No. 1 Royal Engineers’ Stores Depot, Long Marston.
6 My thanks to Gerry Zierler for checking earlier aeronautical charts in his possession. These seem to follow contemporary OS small-scale mapping in their depiction, despite the pilot seeing something quite different from the cockpit.
‘German–Soviet friendship’ and the Warsaw Pact mapping of Britain and Western Europe

J L Cruickshank

Not all Warsaw Pact mapping was prepared by the USSR, and more than one Warsaw Pact nation prepared military mapping of the British Isles. The USSR was undoubtedly foremost among the east bloc map-producing states, producing an enormous range of maps covering the entire world. Nevertheless maps issued by the German Democratic Republic (East Germany, GDR) duplicated an important part of this coverage.

There were several reasons for this. After 1945 the Russian language and its Cyrillic alphabet became ubiquitous throughout Europe east of the Iron Curtain. Nevertheless in countries newly subjected to Soviet control the number of inhabitants that could read and write Russian was small. Even after Russian became a compulsory subject in schools, there was often little enthusiasm for its study. Only a minority of adults retained any competence in its use. It was simply not realistic to train or command the armies of the Warsaw Pact wholly in Russian, or to expect all those who needed to be able to use military maps to be able to do so in Russian.

Furthermore, during the 1940s and 1950s much of the territory of the Warsaw Pact nations had yet to be mapped in Russian. At that time by far the most up-to-date and readily available mapping of Central and Eastern Europe had been that prepared by the German army from a multitude of sources. Pre-war Russian topographic mapping, although extensive, had been limited to the most western part of the Union and much of it was derived from pre-revolutionary surveys. Almost all of the topographically mapped area of the USSR, and more, had been occupied by the Germans in 1941-42. The Russians had found themselves mapping their own territory almost from scratch under war conditions. Shhtemenko’s memoir of this period puts a positive gloss on the situation, but the reality was obviously a nightmare.¹ Notwithstanding the enormous Soviet efforts to remedy this, when the Red Army advanced beyond its pre-war frontiers in 1944-45 it inevitably became dependant on German mapping.

The immediate post-war situation is clearly indicated by the 1947 edition of the Red Army ‘Military Topography’ manual.² This is very much equivalent to the familiar British War Office Manual of Military Map-Reading, Field Sketching, and Aerial Photograph Reading of 1929/1939. It includes example plates of the standard Soviet map-series at scales between 1:25,000 and 1:200,000. It also includes plates showing examples of German, Romanian, Finnish and Japanese maps and gives lists of conventional signs for each. There is


also a conventional sign list for Turkish maps. The text gives an extended account of the features of German mapping, with shorter analyses of the mapping of Romania and Finland, of Japan and China, and of Afghanistan and Iran. It must be remembered that for the USSR the spoils of the Second World War had included the annexation of substantial territories from Germany, Romania, Finland and Japan, as well as hegemony over a long list of neighbouring countries. Quite clearly maps being used in 1947 for the occupation of all these territories were still those originally produced by their former owners, or by Germany, not Russian ones.

At the end of the war in 1945 Stalin decreed that the first priority for the USSR Military and Civil State Topographic Services was the production of a 1:100,000 map of the entire Soviet Union. At immense cost (in resources and human lives) this was achieved by 1954. Once this task was approaching completion Moscow’s attention shifted to the mapping of Soviet satellites and other parts of the world.

I

State functions and organizations in the Soviet occupation zone of Germany arose out of a period of flux in the late 1940s. In 1949 the German Democratic Republic (GDR) itself was proclaimed. A legal structure for map production was laid down in 1951, and in 1952 new central-government mapping organisations were established. In 1952 a conference in Sofia of the geodetic services of what were to become the Warsaw Pact nations adopted a series of resolutions. Essentially these agreed that all the ‘socialist’ countries of Europe would prepare their maps according to Russian standards. Following this, a formal decree of March 1953 officially inaugurated the re-mapping of East Germany in accordance with Soviet protocols.

In the years since German reunification several retrospective accounts of the maps of the German Democratic Republic have been written. Most of these have been written with inside knowledge by former members of the East German mapping services, but all have concentrated on the maps of the GDR itself, and not on the GDR’s extensive extra-territorial mapping.

Eventually there were four quite separate categories of official GDR topographic mapping that were subject to different security restrictions. Maps for open publication and sale were of deliberately limited quality, and from 1965 onwards included complex deliberate distortions. At scales larger than 1:200,000 coverage of the country was incomplete, and after 1965 was usually based on enlargements of the (distorted) 1:200,000 map. Even the paper used to print these maps was of deliberately poor quality. Secondly, varying quality reproductions of the (often long out-dated) pre-war 1:25,000 Meßtischblätter

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3 Postnikov, *op cit*. The date is given as 1955 on some current Russian websites, see for example [http://miltop.narod.ru/News/histories.htm](http://miltop.narod.ru/News/histories.htm).


5 This grossly over-simplifies the complex evolution of the public maps: see W. Pobanz, ‘Topographic alterations to commercial cartographic maps in the GDR’, (in) D Unverhau (ed.), *op. cit.*, 2006, 183-203.
were produced, but from 1965 these were security-classified as ‘for official use only’ and ceased to be publicly available. From 1966 onwards a third group was developed. These were new maps for civil official use, the Ausgabe für die Volkswirtschaft (AV), 6 and were more highly classified documents. They were accurate but did not carry the military grid or any coordinates referable to it, and their content was elaborately censored to conceal or disguise objects of military significance. Their coverage did not extend beyond the frontiers of the GDR.

The fourth group were the military maps, now generally referred to as the Ausgabe Staat or Ausgabe Sicherheit (AS), 7 although these designations were never official. These were gridded according to the Russian 1942 system, and produced to high standards of precision and accuracy. They were classified as highly secret (Vertrauliche Verschlusssache, VVS). After 1965 access to them was not routinely available even for training purposes, and their issue, secure storage while on issue, and return after use were all very tightly regulated. Their specifications supposedly matched those laid down by the other ‘socialist brother states’ (i.e. by the USSR). Nevertheless their language (or one of their languages) was German and they used Latin alphabets, either wholly or in part. This mapping extended far beyond the frontiers of the GDR to include not only West Germany but also many other Western (and Eastern) European countries.

While East German military mapping was issued by the army and used by the armed services, the actual preparation of the maps was carried out, from 1951 to the end of the GDR, by a department of the Ministry of the Interior, the Verwaltung Vermessungs- und Kartenwesen (VVK). 8 Printing of the maps was then carried out by a military body, the Militärkartographischer Dienst Halle, under the direction the Militärtopographischer Dienst in Potsdam, itself part of the Ministry of National Defence. From the late 1950s the security of all maps and cartographic data became a matter for the Ministry of State Security (the parent organisation of the Stasi), which therefore exerted tight control at all stages. There was thus a complex but very close interaction between all these bodies. Furthermore in the background, but always present, was the absolute power of Soviet authority. 9

II

The East German Army was initially established in 1948 by the Soviet occupying forces as ‘garrisoned police’. In January 1956 it was notionally transferred to East German control as the Nationale Volksarmee (National Peoples Army, NVA). While this army remained under Soviet operational command, the new body did have some independence and in particular was able to develop its own training manuals and material. The evolution of the map-reading manuals and their associated teaching materials not only provides us with a picture of the

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6 This is usually translated as the ‘edition for the national economy’, although the original German includes a strong implication that the means of production are in public ownership. The AV was introduced in 1966 after restrictions on access to the military maps had been increased in 1965 (see below). It was eventually produced at scales from 1:10,000 to 1:500,000. See W G Koch, ‘On the issue of the topographic maps (edition for the national economy) of the GDR’, (in) D Unverhau, op. cit., 2006, 73-88; and R Lucht, H Henkel and W Scholz, ‘An analysis of the “edition for the national economy” as an implementation of the resolution of the National Defence Council of the GDR of 13 October 1965 in comparison with the topographic map of the GDR’, (in) D Unverhau, op. cit., 2006, 89-132.

7 Ausgabe Staat translates as ‘state edition’, while Ausgabe Sicherheit is ‘security edition’.

8 Note however that in the GDR the Ministry of the Interior, like the Ministry for State Security, counted as one of the armed organs of the state, and not as a civilian body.

development of East German military mapping; it also provides us with a telescope through which we can see the Russian structures underlying East German practice. Some of the manuals also offer us a socialist view of the Ordnance Survey and other western mapping organisations.

The earliest East German map in my collection is a small 1:25,000 sample sheet, the *Muster der Topographischen Karte 1:25 000* published in March 1953. This explicitly shows a fantasy landscape (around a small town called Nover) contrived to show the widest possible range of conventional signs on a small section of map. Half the sheet is devoted to a detailed key to the symbols. There is a *Planzeiger* (Romer), supposedly to be cut out, exactly as on pre-1945 German maps. The sheet is purely German in style, and represents a very minor updating of the specification of the pre-war German 1:25,000 *Meßtischblätter*. Even though the sheet was published in the very month that the decree enforcing the use of Soviet mapping standards was made (and therefore almost a year after the Sofia conference), there is no sign of any Soviet influence on its specification.

The next stage is shown by a military teaching map (*Lehrkarte*) dated a year later (1954), and thus still two years before the formal establishment of the NVA. The map is entirely in German, but has been drawn and laid out in the Soviet style. The area of countryside shown is (according to the latitude and longitude figures in the margin) in the middle of the Baltic Sea, off the northern coast of East Germany. While the place names given (e.g. Menkin, Borsdorf, Neuhof) seem German, the landscape and settlement pattern depicted do not look German; they look far more characteristic of somewhere much further east. Unlike standard Soviet maps, it does include an extensive key to the symbols used. Although fantasy landscapes had previously been contrived for the specification sheets of map series, teaching map-reading using such fantasy landscapes had not previously been part of the German tradition; Germans soldiers had always been taught using real maps. Indeed when German troops advancing through the Ukraine captured a Russian fantasy map in 1941 it was thought so peculiar that a description was published in the house journal of the *Reichsamt für Landesaufnahme*, and the map was initially interpreted as a school-teaching publication rather than as a military issue training map.  

Russian practice however had always been to restrict access to real maps as tightly as possible, and to use fantasy landscape maps for teaching and training. Perhaps surprisingly, the small example plates in the 1947 Russian *Military Topography* manual seem not to be fantasy landscapes. Soviet policy in the immediate post-war period is clarified by the map appendices to AV Gedimina’s textbook of cartography, also published in 1947. 11 Although his series of small map extracts at scales from 1:25,000 to 1:1,00,000 all show a real rural area south of Kiev, his full-sheet example-map at 1:50,000 is different. It purports to show an area south of Omsk in Western Siberia. However the depiction on this of a north-south railway (that does not appear on small-scale maps of the area) and a large river flowing from north to south (when the drainage of the real area is to the north) both make clear that this is a fantasy landscape. 12 Thus in 1947 small extracts of carefully chosen areas seem to have been

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11 AV Gedimina, *Kartografiya*, Moscow: UchPedgIz, 1947; the example map and map extracts are in a separate folder from the text.
12 One might doubt whether in 1947 there was any 1:50,000 mapping near the real Omsk, given that the 1942 German *Planheft Rußland* only identified 1:200,000 mapping of the area, and the post-war mapping campaign concentrated on the production of 1:100,000 mapping.
allowed, but full-sheet examples that included marginalia had to be fantasies. In any case, what the existence of the 1955 Lehrkarte shows is not just the establishment of vernacular East German mapping based on Soviet models. It also demonstrates the imposition of Soviet cartographic security policies.

In 1957, just a year after the formal establishment of the East German Army, the first East German military map-reading manual was issued. This was not only of practical significance for training; it was also the first widely disseminated document making available in German the keys, drawing specifications and specimens of the new East German maps. The book’s title can be translated as ‘Military topography for non-commissioned officers’. The first part of this title is obviously derived from that of the existing Russian military topography manual, and on the back of the title page is a note confirming that the book is based on the Russian one. Politically it was no doubt essential that this was so; nevertheless the work is not a direct translation but a substantial reworking. Not only is the text different and differently arranged; the numerous line diagrams were all redrawn with slightly different details. Curiously, although the example maps have been redrawn entirely in the Soviet style, the fantasy landscape depicted is the same as that of the 1953 Muster, but with all the place-names changed (so Nover for example became Goldemünde). In effect the book (with its example plates) shows an attempt to exert as much independence as possible within the narrow limits set by the Soviets.

The second part of the title of the book is also significant, in that material considered (by the Soviets) to be inappropriate for NCO education is not included in the text, and the political stance presented is the simplistic one required of NCOs. The book thus only includes material on East German maps, and gives almost no concrete information about the maps of the NATO states. The following passage may give the flavour.

The establishment of workers’ and farmers’ power in the German Democratic Republic has provided the foundations for the development of new map series. These series are based on the latest state of knowledge and technology, and thus supersede the old maps in quality and accuracy. … Also the purpose of our maps has changed. The topographic maps of the German Democratic Republic are maps that fulfil both the requirements of the whole public economy as well as the defence of the country, … The maps of the capitalist states serve in contrast completely other purposes. They serve the robber conquest policies that are carried on by the governing circles of the imperialist countries. The topographic maps of the capitalist states have mainly a military character or are compiled in the interest of a single institution. 13

The book was issued in a second edition in 1958 and a third in 1959.14 As far as I can identify, the changes in the text were minor; the page layouts and page numbering remained identical. In 1959 however the appendices were subjected to major change, and more than doubled in length to forty-five pages. The 1:10,000, 1:25,000 and 1:50,000 fantasy map extracts were changed and a new 1:5000 map extract was added. New example maps of different settlement patterns were also added. Most of the tables of graphical map symbols remained substantially the same, although a number of marine and coastline symbols were added. The list of abbreviations used on East German maps was expanded enormously, from four and a half pages to ten and a half.

14 Later editions (e.g. 1963) were reset in a slightly larger format in order to reduce the number of pages, but contained unchanged material.
All of this reflects the rapid expansion (in both extent and range of scales) of the re-mapping of East Germany between 1957 and 1959. In particular it should be noted that 1:5000 had been the scale of the pre-war Deutsche Grundkarte, which for a time was renewed by the GDR, but was not standard in the USSR or the other Warsaw Pact states. There was little need (or scope) for the introduction of new graphical symbols, because all these had been specified by the socialist big-brother state (though the East German coastline had yet to be mapped in 1957). On the other hand the German-language labels and abbreviations used to amplify and identify those symbols, particularly at 1:5000, were a matter for the Germans, and as the mapping of East Germany proceeded, progressively more of these were included in the official list and thus published in the military topography manual.

The next development was the publication in 1960 of a further map-reading manual, *Military topography for officers*. In this the pattern of change was reversed, in that the conventional sign tables and East German example maps were little changed from those in the 1959 edition of the manual for NCOs. It was the text that had been rewritten, and very much expanded. A striking innovation was the inclusion of a chapter giving detailed analysis of West German, French, British and American maps, including details of their different projections and of the ways in which they did not come up to Warsaw Pact standards. Added to the appendix, to illustrate this chapter, were a series of western example maps with tables of conventional signs and abbreviations. These were not fantasy maps; for example the plate showing a British one-inch map is a beautifully executed copy of the north-west corner of Seventh Series one-inch sheet 71 (*Alnwick*) in its original (A) state. These plates seem to have signalled the beginning of East German mapping of western countries.

Nevertheless the conventional signs tables in all these books remained provisional. It was not until 1961 that a free-standing booklet was finally published containing definitive tables of all the conventional signs and abbreviations at scales between 1:25,000 and 1:1,000,000. It also contains specifications for both the original set of alphabets and a new set (K60) introduced in 1960 as a consequence of the introduction of phototypesetting.

From 1954 onwards all these publications were explicitly based on Soviet models and specifications, and indeed between 1955 and 1959 two Soviet military-topography officers were permanently posted to ‘assist’ the VVK. One might think that there had been no previous German cartographic tradition. Occasionally, however, that older tradition reappeared. A basic instructional book was published, also in 1961, containing over forty pages of thumbnail sketches of landscape objects and features, tabulated against the conventional signs used to represent them. Some of these sketches had previously appeared in the German (and Soviet) military topography manuals, however the underlying idea of this

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15 The re-mapping of the GDR itself was eventually completed in 1963, but in parts was based on old surveys. The large-scale resurvey of the country was only completed at the end of the decade, leading to new editions of sheets.


17 A revised second edition of this book appeared in 1962, in which (amongst other changes) the account of West German maps was entirely re-written, and a comment that Ordnance Survey maps were only available from military offices was omitted.


manual was neither new nor based on Soviet practice. The model for it was in fact a wartime German military manual, from which the layout and also many of the sketches derived.\textsuperscript{20} The Soviets also seem at times to have copied East German practice, but without acknowledgement. In particular, the launch in Moscow of the monthly journal \textit{Geodesija i Kartografija} in 1956 seems to have been based on that of \textit{Vermessungstechnik} in East Berlin four years previously.\textsuperscript{21}

III

From the beginning, there was a continuing tension in East Germany between the Germans themselves, who wished their maps (and the data underlying them) to be widely available, and the Soviets who wanted almost complete secrecy. When the contradictions between these views came to a head it was of course the Soviet view that was enforced.

In pre-revolutionary Russia all governmental activities, including the military surveying and mapping of the Empire, took place at the Tsar’s absolute prerogative. The making of military maps was not a public service, and publication of maps was tightly restricted.\textsuperscript{22} Secrecy about the Imperial Russian maps was also perhaps encouraged by an official recognition of their many deficiencies and gaps.\textsuperscript{23}

Remarkably little changed after the October revolution. Official accounts from the 1950s and 1960s suggest that Lenin’s decree of the 15 March 1919 ‘On the establishment of a Chief Geodetic Office’ initiated a revolutionary change in the way Russia was mapped,\textsuperscript{24} but firstly the decree can be seen simply as an assertion of power to reshape an existing governmental apparatus, and secondly Lenin’s decree was never fully implemented. The decree was followed by twenty years of chopping and changing as proponents of various alternative structures rose and fell. In practical terms there was marked continuity between Tsarist and Communist bodies, and in particular the Tsarist Military Topographic Corps remained in existence as the Military Topographic Corps of the Staff of the Workers and Peasants Red Army. This continuity is for example clear in the reports of the astronomical and geodetic surveys of the war-time years published in 1924; they appeared simply as volume 73(I I) of a series of memoirs established in Tsarist times.\textsuperscript{25} One might describe Lenin’s innovation as the creation of a dual structure comprising a civil body under close party control directing the activities of a military body that was also under tight political control but through different command structures.\textsuperscript{26} Autocracy could thus be strengthened, while the risks of any military

\textsuperscript{20} \textit{Bildliche Darstellung der Kartenzeichen in den amtlichen Karten (Kartenfibel) D. (Luft) 1802: H.Dv. 271}, Gotha: Justus Perthes, January 1941.

\textsuperscript{21} F Deumlich, ‘Die geodätische und kartographische Fachliteratur in der Sowjetunion’, \textit{Vermessungstechnik} 5 (1957), 263-4. It was subsequently claimed that the 1956 Russian journal was a continuation of a journal with a different title that had ceased publication in 1940 (well before the German attack on the USSR): V V Polevcev, ‘50 Jahre sowjetische Fachzeitschrift „Geodezia I Kartografija”’, \textit{Vermessungstechnik} 24 (1976), 103-106.


\textsuperscript{23} See Heller, \textit{op. cit.}, (1962), 353, for a fairly critical evaluation of the Tsarist military maps. A more nuanced account seems overdue.


\textsuperscript{25} Zapiski Voenno-Topograficheskogo Upravleniya LXXIII (II), Moskva (1924).

\textsuperscript{26} The Red Army command structures themselves comprised parallel military and political hierarchies (the latter having precedence); thus the senior editor of the 1924 volume was a political commissar while a military geodesist was second editor.
autonomy developing were kept to a minimum.\textsuperscript{27} However, whatever Lenin decreed, it was Josef Stalin who actually established this structure. In 1935 he transferred the then civil geodetic body to the control of the NKVD (the security service, predecessor of the post-war KGB and present-day FSB), but only in 1939, after purging the Red Army of a very large proportion of its officers, did he establish the Chief Administration of Geodesy and Cartography (GUGK) under the NKVD and subordinate the Military Topographic Corps to it.\textsuperscript{28} Thus it was Stalin’s structure that was recreated for the GDR and for the other ‘socialist brother states’.

Through the later 1950s and early 1960s, as East Germany was resurveyed and remapped, stress was repeatedly placed on the supposedly new character of the maps prepared by the GDR. They were not only intended for military purposes but were also supposedly designed (unlike all western maps) for all public economic needs.\textsuperscript{29} In 1965 this duality finally crashed into the buffers of Russian cartographic secrecy.

After the death of Stalin in 1953 Nikita Khrushchev came to monopolise power in the Kremlin. Although quite as autocratic as his predecessors, he aimed both to stimulate economic growth and to allow his subjects to aspire to greater material well-being. To achieve this he encouraged decentralisation and local initiative (within limits). Overall, despite various setbacks, the policy achieved its aims. Nevertheless there was resentment amongst the nomenklatura of Moscow about their loss of influence, coupled with a perception that weakened central control was leading to undesirable heterodoxy. In 1964 Khrushchev was deposed in what was the first bloodless coup in Soviet history. Over the following year, as Leonid Brezhnev consolidated his power within the Kremlin, the power of the Kremlin over the Soviet periphery became resurgent.

It was against this shifting background of Kremlin politics that the issue of the appropriate level of secrecy for Warsaw Pact maps was determined. The high point of openness was perhaps the publication in 1961 of a map-reading pamphlet for schools and Young Pioneers. This introduced schoolchildren, and particularly the GDR equivalent of Scouts, to the East German military maps, and included elaborate example maps.\textsuperscript{30} However, even under Khrushchev, the Germans were repeatedly warned that they were being far too open with their maps.\textsuperscript{31} Soon after Brezhnev came to power Soviet standards became strictly enforced. Just as in 1952, the new policy was formally established as resolutions of a conference of the geodetic organisations of the Warsaw Pact countries.\textsuperscript{32} There was however a change. Until the 1960s it was the topography that had to be kept secret. With the advent of

\textsuperscript{27} To Lenin and Stalin any military autonomy was an obvious danger to the regime; it was a mutiny that had triggered the October Revolution. Senior officers were a particular concern. David Rich has discussed the development of subversive ideas of autonomy amongst senior Russian General Staff officers in the decades leading up to the First World War: David Allan Rich, \textit{The Tsar's colonels}, Cambridge, Mass.: Harvard U P, 1998. A number of such officers had transferred seamlessly from the Imperial Army to the Red Army (\textit{Idem}, 193-4). Even earlier, the 1825 Decembrist uprising (much admired by the Bolsheviks) had been a military revolt led by aristocratic young officers infected with western political ideas.

\textsuperscript{28} F A Shibanov, ‘The establishment of a cartographic-geodetic Service in the USSR’, \textit{Cartographica} \textbf{12} (1975), 176-189.

\textsuperscript{29} For an example, amongst many others, see the quotation from \textit{Militärtopographie für Unteroffiziere} given above.

\textsuperscript{30} S Möbius, G Tanner and B Baacke, \textit{Arbeit mit Karte und Kompass}, Berlin: Volk und Wissen VEB, 1961. The booklet was reissued in 1963, when it included instructions for ordering copies of the old \textit{Mefstischblätter} plus details of four new 1:25,000 teaching maps (\textit{Lehrkarten}) available for school use from 1962.

\textsuperscript{31} The remainder of this paragraph is largely derived from Dagmar Unverhau, ‘The surveying line in the Ministry for State Security’, (in) D Unverhau, \textit{op. cit.}, 2006.

\textsuperscript{32} The conference took place in Moscow, 15 - 24 September 1965.
satellite photography this became futile. From 1965 what had to be kept secret was any coordinate framework that could be used to fix the position of satellite photographs. The effect of this was that any map of a Warsaw Pact country that carried the 1942 co-ordinate system or anything referable to it, or had clear sheet-edges showing the graticule without distortion (however old the topography), became highly secret (Vertrauliche Verschlußsache, abbreviated to VVS).\(^{33}\) In essence every map produced by the East German state, including the maps printed for public sale, immediately become too secret to be issued or used. Existing stocks of maps were removed from academic institutions and government bodies. For a time it was seriously questioned whether any maps at all could be available for civilian use.

The 1965 increase in secrecy thus profoundly affected all the producers of GDR mapping. All maps for public or for civil official use had to be recast on new deliberately distorted bases. Furthermore the previous openness about the development and content of the undistorted maps abruptly ceased. The existing openly-published military topography manuals remained in use for a time, but were soon replaced. In 1969 a new booklet was produced for internal military use only. This provided updated definitive keys to the symbols, specifications and abbreviations for the undistorted GDR maps, with new fantasy example maps and an elaborate series of example plates of West German, NATO, Belgian, Danish, French, British, Dutch and American maps and their symbols. The following year a completely new map-reading manual was produced, incorporating the entire contents of the 1969 booklet as an appendix.\(^{34}\) This was clearly based on the two previous military topography manuals which it officially replaced, but was only available for internal military use. The circulation of copies was tightly controlled, and so my copy carries a long series of stamps recording its presence during annual stocktakings. The two Ordnance Survey example maps are a 1:63,360 extract showing Stourport-on-Severn and Kidderminster (see Fig. 1), and a 1:250,000 extract centred on the same area. The one-inch extract did not reproduce Seventh Series sheet 130 in its then-current B state (of 1967), but an older (and very different) A state. The area shown is not at the edge of the OS sheet, but the East Germans carefully created (or perhaps found) an OS-style margin for their extract, including correct National Grid figures, latitude and longitude values, and road mileages from the sheet edge to Ludlow and Worcester. There is however an error, present in both the 1969 and 1971 printings: the captions to both OS extracts state that the sheet lines (Blattschnitt) follow the graticule. This immediately makes clear that the writer of the caption was unfamiliar with the sizes, shapes and projection of OS maps, and had not studied the extracts themselves. Although the 1971 manual includes an analysis of the NATO maps of West Germany, there

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\(^{33}\) One surprising result of the requirement to maintain secrecy of co-ordinate data above topography is that the elaborate suite of military training maps (Lehrkarten) issued in 1981 showed the real topography of a wide area east and west of Dresden. This was minimally disguised by the mirroring the image through a north-south axis and by changing all the place-names (Dresden for example being renamed Strasen). The sheet lines were however shifted, while the geographical co-ordinates and sheet-numbers given were those properly of sheets around Magdeburg. The co-ordinate systems shown on these maps were thus completely unrelated to the 1942 system. See fig. 4.

\(^{34}\) Anleitung zum Lesen topographischer Karten (Zeichenerklärung), 1969, Lit.-Nr.: 59/69. LB [Lehrbuch] 042/6/001 Militärtopographische Ausbildung. Lit.-Nr.: 15/71. Authorised in March 1970, this text came into force in January 1971 and so carries that date. An additional manual was also published in 1970 giving directions for the marking up of maps with tactical symbols and for the cutting and sticking of small map-sheets into larger and more practical sheets: H Horn and H Lasch, Anleitung zur Anfertigung und Führung militärischer Arbeitskarten, Berlin: Deutscher Militärverlag, 1970. This is a direct equivalent of I D Pombrick & N A Shevchenko, Karta Ofitsera (The officer’s map), Moscow: Voyenizdat, 1985.
is no text referring to the OS or other foreign example maps included. Despite the example maps included, the 1971 manual therefore demonstrates that British maps had ceased to be studied (and had probably ceased to be available for study) by East German soldiers.

During the Brezhnev years Soviet policy was to suppress change and to enforce stability. Political and economic stagnation was the widespread result. However as Brezhnev (and his contemporaries in power) visibly aged and became infirm, the grip of Moscow on the periphery began to slacken. On Brezhnev’s death in office in 1982 he was briefly succeeded by two further elderly, infirm, and therefore short-lived leaders, before Mikhail Gorbachev came to power in 1985. His attempt to reform the Soviet empire through Glasnost (openness) and Perestroika (reconstruction), without using military force, led to further loosening of central control to the point where the East German state lost its grip on its own people. The barriers separating East from West disintegrated under popular pressure in November 1989 and the GDR rapidly ceased to exist. In turn the Soviet Union itself was to disintegrate in 1991.

Paradoxically the 1980s appear to have been a high point for East German military mapping. New blood was being recruited as the leadership established in the 1950s reached retirement age. Despite much Marxist-Leninist rhetoric, there was an easing of the restrictions on publication (clearly visible in the pages of Vermessungstechnik). There was also clearly a re-evaluation of what had been achieved in the 1950s and early 1960s, and a return to some of the ideas suppressed in 1965. Despite resource restrictions that constrained the renewal of civil mapping, the military mapping of East Germany was completely overhauled during the decade, as was the GDR mapping of West Germany. New series of bilingual (Russian – German) maps were developed, prepared and printed, and other derived series (e.g. a geodetic edition of the 1:50,000 (AS) map and a ‘March-routes’ edition of the 1:100,000 (AS) map) were also produced. A new military topography manual for public sale was produced in 1982, with smart, shiny-green covers and much attractively coloured artwork. It includes extracts from the 1981 mirror-image Lehrkarten, and a startlingly comprehensive bibliography of restricted and secret documents, although no western maps. At the re-unification of Germany in 1989-90 East German military mapping was in very good order indeed.

IV

There remains no adequate account in the public domain of East Germany’s military topographic mapping. It was clearly hoped that Dagmar Unverhau’s volume could contain a review written by a military man with inside knowledge. What was in fact provided was a ‘statement’ written by a named West German officer. In the context of a book on excessive secrecy, this statement comes over as a comic interlude. Written to provide the absolute minimum of concrete information possible about what resources came to the Bundeswehr when the NVA was merged with it, it appears to provide a delightful example of mindlessly inappropriate excessive secrecy. But from whom was information about East German maps to be kept secret, and why? The Russians already knew that all their formerly secret cartographic data was presented on a series of plates both to the NATO powers and to the western public during the 1990s. In fact what the statement conceals is a major failure by the West German Military Geographic Service. During the autumn and winter of 1990-1991 the West German service took over the East German Military Topographic Service (MTD). The remit of the very small group of West Germans sent to the GDR was to dismantle the East
Figure 1: One-inch map extract from Anleitung zum Lesen topographischer Karten (Zeichenerklärung), 1969, 109
Figure 2: Part of East German 1:500,000 topographic sheet M-30-B London (1989), derived from Russian sheet М-30-Б Лондон (1985)
German service as rapidly as possible, to disperse its personnel and equipment, to salvage only a very limited range of survey and cartographic data, and to dispose of all material not of obvious short-term use. There seems to have been little, if any, intelligent (or intelligence) evaluation of the records and stock of the MTD before their dispersal and incineration. What might have been an intelligence bonanza was literally thrown away.\textsuperscript{35}

In the absence of any definitive account, this study has had to fall back on an examination of the surviving maps themselves. The patchy survival of these maps, and my even more limited ability to find examples, inevitably means that I only have part of the story. Nevertheless it is clear that all East German military topographic maps were closely linked with parallel Russian maps. Sheet lines were the same, and the sheet numbering system was the Russian system, modified to replace Russian characters with Latin ones.\textsuperscript{36}

Within East Germany, the German maps and surveys were generally the primary source from which Russian maps were derived, although Russian garrison areas and similarly sensitive areas were not open to German surveyors (and nor was large-scale survey data of such areas made available to the East Germans).

The initial re-mapping of East Germany itself took place between 1957 and 1963. As it approached completion, extra-territorial maps also started to be produced by the GDR. That 1959 was the beginning of this work is suggested by the issue in September of that year of a ‘preliminary edition’ of an instruction manual for the writing of foreign-language geographical names.\textsuperscript{37} Extra-territorial maps, and successive manuals of foreign names, continued to be produced until the end of the GDR.\textsuperscript{38}

East German mapping extended, apparently seamlessly, at 1:25,000, 1:50,000, 1:100,000 and 1:200,000 across both the GDR and West Germany north of 48º 40'. The three smaller-scale series were each derived in turn from the next larger scale. This suggests that all these GDR maps were in turn the base materials from which the corresponding Russian maps were derived.\textsuperscript{39} East German 1:50,000 mapping was also prepared of all Denmark, southern Sweden, northern France and probably of the Low Countries.\textsuperscript{40}


\textsuperscript{36} Nonetheless this did create scope for confusion. B is the second letter of the Latin alphabet, but the third letter of the Cyrillic alphabet. As a result 1:500,000 sheet M-30-B is the London sheet in the East-German series, but the Brest sheet in the Russian series.

\textsuperscript{37} \textit{Allgemeine Richtlinien für die Schreibung fremdsprachiger geographischer und topographischer Namen in deutschen Karten}, Vorläufige Ausgabe, Berlin: VVK, September 1959; cited in: E Pohlenz, ‘Namensschreibung in deutschen Seekarten’, \textit{Vermessungstechnik 9} (1961), 14-17. A succession of further editions of this manual were issued during the 1960s.

\textsuperscript{38} The manual of Italian names was for example issued in a second edition in 1988: E Haack, \textit{Allgemeine Richtlinie für die Schreibung fremdsprachiger Namen von Italien}, Berlin: VVK, 1988.

\textsuperscript{39} It should be noted in this context that the ‘Topographischer Stadtplan 1:25,000’ sheets of urban areas in West Germany conformed to East German practice in forming part of the main 1:25,000 series. Other Warsaw Pact countries prepared such sheets on independent sheet lines; the Soviet town plans of Britain provide an example. Note also that the junction between GDR and Polish mapping was not seamless. On German sheets from the 1980s covering the German-Polish frontier it is obvious that typefaces and the depiction of woodlands differ on either side of the border. There are similar differences across the GDR-Czech border.

\textsuperscript{40} This description of the extent of coverage is based on surviving maps and on \textit{Kartenblattübersicht 1:50 000 KÜ-4.2}, (1978/1984). The 1:50,000 and 1:25,000 sheets of West Germany that I have seen were all produced in the 1980s and probably represent a second or subsequent edition. In contrast all the sheets of other countries that I have seen are from
similarly derived from these. The relationship of these maps to the Russian mapping of these countries has not been established. While it is possible that they were derived from an original Russian edition, it seems likely that the East German maps were the primary compilation, and that the Soviet mapping was secondarily derived. The eventual relationship between East German and Russian mapping is to some extent revealed by a development of the 1980s. During this decade "bilingual" (zweisprachig) 1:200,000 maps were prepared of both Germanys by the East Germans for the use of Russian troops. This series was derived from the existing monoglot East German 1:200,000 maps (which were not superseded), but the sheets were modified in that all place-names were given primarily in Russian with the German names in smaller magenta lettering below, producing a rather cluttered (but still mostly legible) map. Both the Russian and the East German sheet numbering systems were given. 41 Although these maps were German made, they were not intended for German use. One assumes that they were intended to replace the Soviets' existing Russian language sheets in practical use.

East Germany also produced 1:500,000 and 1:1,000,000 topographic maps covering all of western Europe, including the British Isles, but these were distinctly different in their source. They were not reduced and generalised directly from larger-scale German maps, even when East Germany was the area shown. The source materials for these series were the Soviet maps at these scales. As a result there were inconsistencies of generalisation between these maps and the larger-scale GDR series. 42 Depending on their date of preparation, the East German sheets also conform to several different specifications, and show varying degrees of conversion from Russian into German.

There are two editions of the original Russian 1:500,000 sheets covering Britain and its surrounding sea areas. The issue dates of sheets from the first edition are in the 1960s (1962-1968), with later reprints. 43 The second edition sheets carry issue dates between 1984 and 1986. While the first edition includes many sheets that cover sea areas without any land, only sheets covering land areas were reissued in the second edition. Surviving examples of first edition sheets thus tend to be of sea areas, although there are also examples of sheets with the 1960s base overprinted in the early 1980s with geodetic data. Unlike larger-scale Warsaw Pact maps, the sheets include a Russian language key to their symbols in the lower margin.

The East German sheets follow this pattern. Sheet N-31-A (Doggerbank) was prepared and printed in 1963 from the September 1963 Russian edition. For the second edition, the preparation of fully translated German versions lagged several years behind the issue of the Russian editions (see Fig. 2). Perhaps as a result, there are two types of partly-converted German versions of these maps. In one, for which I have only seen examples covering

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41 The definitive specification for this zweisprachig series is Anlage 5 to the fourth edition of ACD13-16 Zeichenvorschrift, Instruktion und Redaktionsanweisung für die Bearbeitung der Topographischen Karten 1:25 000, 1:50 000, 1:100 000, and 1:200 000, des Topographischen Stadtplanes 1:25 000 und der Topographischen Karte 1:200 000 (zweisprachig), Berlin: VVK, 1984, ff. 120-133. This came into force on 1 January 1985 but there were earlier prototype versions of these maps. These do not carry the zweisprachig title and the relationship between the type sizes of the German and Russian names is less constant. I have not so far had the opportunity to compare the zweisprachig maps with their purely Russian counterparts.


43 This paragraph has benefited from discussion with John Davies. See also John Davies, 'Uncle Joe Knew Where You Lived … (part I)', Sheetlines 72 (April 2005), 28.
mainland Europe, an otherwise unmodified Russian map was overprinted in red with many German place names (for the larger places, but not the smaller). From the late 1960s an identifying numerical code appeared in the top margin of all East German military maps. These overprinted maps carry a code beginning with 74.7., while sheets of the main 1:500,000 series have codes beginning with 01.7.. In a further version, a completely unmodified Russian map merely carries a German print-code at the bottom and a German identifier code (beginning with 71.7.) at the top. Since the Stornoway sheet (O-29-B) was printed in this form in 1989, using a Russian base originally issued in 1984, it seems probable that not all the Russian second edition 1:500,000 sheets of Britain were fully translated before the end of the GDR in 1990.

A further series of 1:500,000 extra-territorial maps were prepared during the 1960s: the *Flugmeldekarten*. These were equivalent to Britain’s Air Plotting Charts of the 1940s and 1950s, although there was slightly more topographical information, and some colour was used.\(^{44}\) The sheets were intended to be used by aircrew as bases for reporting their routes. The projection was the same as that of the standard topographic series, but (unlike the standard 1:500,000 series) these landscape-format maps cover the area of half of a standard 1:1M sheet, rather than the usual quarter. They did not carry any civil air information, but did carry the 1961 graticule reference-system. The series was progressively extended to cover both eastern and western Europe including Britain and its adjacent sea areas. Sheet M-31-A/B, (Southend-Bruxelles) was for example prepared in 1965 (see Fig. 3); sheet O-31-C/D (Long Forties-Nordliche Schlickbank) in 1966. Each of these sheets was derived from the corresponding (Russian) 1:500,000 topographic sheets. Sheets covering the USSR seem to have been produced rather later and (presumably for security reasons) were stated to be based on an enlargement of the 1:1,000,000 International Map of the World rather than the 1:500,000 Russian map.\(^{45}\)

The survival to the present time of copies of the *Flugmeldekarten* is notable; few British Air Plotting Charts survive outside official archives. The explanation is probably that the *Flugmeldekarten* were little used and simply remained in store. Since East German military flying was restricted there was little reason for their military issue. And with no civil-air information, they were of no value for commercial aviation. Indeed from 1966-7 pilots of *Interflug*, the East German airlines, were required to use only special 1:2,000,000 flight maps with inset maps of airport surroundings at 1:1,000,000. These small scale maps were plotted on individual projections which were aligned obliquely to the graticule.\(^{46}\) They thus did not offend against the secrecy regulations. For the approaches to East German airports these sheets were supplemented by a series of specially drawn maps and diagrams published with an air traffic handbook that was internationally available. By 1967 the secrecy of the *Flugmeldekarten* was such that a review of international and East German air mapping, published in the January issue of *Vermessungstechnik*, omitted all mention of the series.\(^{47}\)

The GDR also produced 1:1,000,000 mapping based on the corresponding Russian maps. I have only seen a couple of these sheets (M-29 Cork, O-29 Hebrides), but these are both fully bilingual (*zweisprachig*) maps issued in 1986 with a specification corresponding closely

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\(^{44}\) Grey margins, settlements and railways, blue water features, magenta international boundaries and graticule (with 1961 reference system), and orange roads.


\(^{46}\) Southeast England, including London, appeared on the Paris - Moscow sheet.

Figure 3: Part of East German 1:500,000 Flugmeldekarte sheet M-31-A/B Southend-Bruxelles (1965)
to that of the 1984 specification *zweisprachig* 1:200,000 series. Like the Russian originals at 1:1,000,000, they have keys to their symbols in the lower margin. These have been fully translated into German. Both sheets are derived from Russian sheets issued fifteen years previously in 1969. The identifying numerical codes at the tops of these sheets begin with 74.8., rather than 01.8., suggesting that there was also a pre-existing purely German series (possibly from the 1960s or 1970s) that I have not seen.

V

Elaborate *Militär-Geographische Angaben* (Military-Geographical Reports) were produced by the German General Staff before and during the Second World War. It may therefore seem no surprise that until its very end East Germany prepared military-geographical studies of western European countries. However the GDR studies were very different from those of the 1940s and, to my surprise, very much less comprehensive and accurate.

The studies were carried out for the General Staff by the Military Academy ‘Friedrich Engels’ (the GDR Staff College). For what was termed ‘the western theatre of war’ (a polygonal area including Leningrad, Kiev, and western Europe excluding Scandinavia, Italy and Yugoslavia) the basic documents were an atlas of 1:500,000 maps with an accompanying text volume.48 These were extended (*inter alia*) by a volume of studies of the area covered by the GDR’s 1:200,000 maps, and further by a series of three loose-leaf volumes covering France, Great Britain (including Northern Ireland) and Iberia.49 The British volume is quite slim; there are fifty-eight double-sided A4 sheets of text with ten thematic maps. The French one is only slightly fatter, with seventy-two sheets of text and the same number of maps.

The maps were elaborately printed in many colours, but although the sheets fold out to 57 × 59 cm, their scale is only 1:2,500,000. The sheet-size could have allowed a larger-scale map, but most of the space is wasted. The maps of both Britain and France derive from a common base map which has its central meridian far to the east of the areas shown; the graticule is thus at about 30º to the sheet margins.50 These maps are not satisfactory. The very small scale means that even county boundaries proved difficult to plot adequately, while the boundaries of metropolitan districts could not be shown. The place-names and symbols used are so large that the positions they refer to are unclear. In addition, they make the topographic base illegible. The scale also conceals weaknesses in the data plotted on the maps.

As one reads both the maps and the text (both of the British and French volumes), two important underlying weaknesses appear. Firstly the compilers’ complete lack of direct experience of Britain or France, and of British and French life, is very obvious. Secondly it is

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48 **Militärgeographische Auskunftsdocument über den Westlichen Kriegsschauplatz des Hauptstabes der NVA** (Atlasband: GVS-Nr. A 478 000; Anlagenband: GVS-Nr. A 477 999). I have not been able to examine copies of these documents.


50 This ought to provide a clue to the source of the base-map. The USSR produced a map of ‘The Soviet Union and adjacent states’ (covering all Europe, most of Asia, and the northern half of Africa in 24 rectangular sheets) at this scale. However the projection of the maps in the British and French military-geographical volumes, while similar, does not appear to be quite the same, and the topographical image is different. Nor do the maps seem to be based on the 1:2,500,000 World Map (prepared on a co-operative basis by the geodetic services of the socialist countries), to which the GDR contributed 31 sheets; see John Davies, ‘Comrade Baranow, the bouncing Czech, Penkilan Head and the World Map’, *Sheetlines* 78 (April 2007), 32-33; and see H Schilling and E Haack, ‘Die Weltkarte im Maßstab 1:2 500 000’, *Vermessungstechnik* 12, (1964), 367-368, and Haack, op. cit. (1996), 30.
evident that the compilers had not had access to a set of Ordnance Survey 1:50,000 maps, or to the IGN equivalents of France. Indeed it is not obvious that they had had access to the Soviet large-scale maps of Britain and France.

The first point is clearly shown by the chapter and map on Britain’s road network. Although East Germany had inherited part of Hitler’s Autobahn network, this was by western standards underused, under-valued, and under-maintained. In their analysis of their own country the GDR General Staff treated Autobahnen and Fernverkehrsstraßen (roughly speaking, A-roads) as close equivalents. This perhaps reflected the maximum speed of a Trabant or Wartburg car, as well as the small proportion of long-distance traffic that travelled by road in the GDR. In contrast the motorways of Britain in the 1980s already provided the principal routes for the great bulk of long-distance goods and passenger traffic. Speeds and traffic densities were far greater than on most A-roads, or any East German road. Yet the GDR General Staff treated British motorways and A-roads as much the same. They argued that for military operational purposes the road network of Britain could be considered as simply being two north-south roads and eight east-west roads linking ports. One north-south road led from Bournemouth to Greenock via Bath, Cheltenham, the M5, the M6, the A74 and a diversion to the south of Glasgow. The other led from Southampton to Wick via Northampton and Wetherby (this was before the Newbury bypass was completed and almost twenty years before the A1-M1 link was built around Leeds). A tributary to this road led from Brighton via Central London and the Great North Road to Wetherby. The M1 south of Northampton was considered of minor importance, as was most of the M25, however the road from Great Yarmouth via Norwich, King’s Lynn, Nottingham, Derby and via the A38 and A5 to Holyhead was considered of major strategic importance. Even considering Britain as no more than a conduit for supplies and reinforcements en-route from the USA to a battlefield in northern Germany (as the study did), the routes shown are unrealistic. For example the ports at Ipswich, Felixtowe and Harwich were not considered to have important road links, although Southend and Yarmouth were.

The second point is shown by the compilers’ difficulty in localising various sites of military importance. I do not have access to any classified British data about nuclear-weapons stores and the like, so cannot judge the accuracy of such information, but much of what the East Germans tried to plot could have been taken directly from an OS map. The boundaries of military training areas are for example prominently shown on OS maps, yet the GDR General Staff were unable to identify a single one north of the English Midlands. They plotted important ‘funktechnische Posten’, which included satellite and missile tracking stations. Yet neither Menwith Hill (west of Harrogate) nor Fylingdales (on the North York Moors) are shown. Both appear on OS maps. It is of course possible that the East Germans did not think to look for such information on a publicly available map. Boundaries of their own training areas were not marked on their own (secret) 1:50,000 or 1:100,000 maps, except on a special overprinted 1:100,000 edition that was subject to even greater secrecy. Even now, published keys to Russian military maps include no symbols with which to identify military training areas.

51 W Behr, Militärgeographische Bedingungen der Deutschen Demokratischen Republik; Studienmaterial, GVS-Nr.: B 453 422, 1986, 86-90.

52 Topographische Karte 1:100,000, Karte der Marschstraßen, GVS-Nr. B 370 900.

53 A A Psarev (trans. P Gallagher), Russian military mapping; a guide to using the most comprehensive source of global geospatial intelligence, Minneapolis: East View Cartographic, 2005. And see http://miltop.narod.ru
Both these points however bring us back to the ‘excessive secrecy’ that was the subject of Dagmar Unverhau’s volume. There has been a very long tradition in Russia of collecting intelligence avidly, while not providing commanders of front-line units with available information, particularly if obtained clandestinely, even when commanders need it and have specifically requested it. Thus in the 1880s the Russian General Staff in the Warsaw Military District were not permitted to develop their mobilisation plans using information about German war plans and railway capacity that was available to the Main Staff in St Petersburg. In 1941 Stalin did not trust his Generals with intelligence received about German intentions until after the USSR had been attacked and most of the Red Army had been overwhelmed. The GDR military-geographical studies of the 1980s make it clear that key information that was surely available to Moscow was not made available to the East German General Staff. One might think that a set of OS maps of Britain ought to have been readily obtainable by the East German staff college; however the college had probably not been permitted access to original western maps since the introduction of the 1971 map-reading manual, and I can see no sign that the College had even had access to the Russian large-scale mapping of Britain. If the Third World War had started, the East Germans would have been fighting in blinkers.

VI
Despite the monolithic external appearance of the Soviet Union, the sheer sizes of both the country and its assumed task of mapping the whole world inevitably dictated distribution and decentralisation of the work involved. The present study has demonstrated that this devolution extended outside the USSR to include the East German mapping agencies, which contributed the large-scale topographic mapping of a large chunk of northern Europe to the world mapping project.

 Nonetheless East Germany’s contribution was precisely delimited and not autonomous. Haack has confirmed what is obvious from surviving maps, that reproduction material for topographic maps was transferred between the geodetic services of the Warsaw Pact nations. The corollary of this is that the extra-territorial mapping undertaken by each geodetic service had to be co-ordinated with that undertaken by each of the others. NATO of course did likewise, even if in practice the US Defense Mapping Agency undertook the lion’s share of the work. NATO mapping was however produced on a country by country basis, resulting in marked discontinuities at national boundaries. Warsaw Pact mapping was intended to be continuous across frontiers, even if some differences of specification did in practice creep in. Accordingly, the allocations of extra-territorial mapping were also not delimited by national frontiers.

East Germany’s large-scale topographic mapping of the Federal Republic of Germany was incomplete, in that it did not extend south of 48º 40’ N. Thus the mapping of Stuttgart fell within the GDR’s remit, but that of Munich did not. The implication of this is that southern Bavaria was mapped for the Warsaw Pact nations by one of the other socialist geodetic services. Simple proximity suggests that the Czechs were most likely to have undertaken this, but the next obvious question is how far their sector extended. Hungary’s contribution then of course has to be considered, along with that of each of the other socialist countries. Did Cuba play a part, and if so what? And was the Russian large-scale mapping of

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the British Isles prepared in the USSR itself, or by one of its satellite countries? All these questions make it clear that to understand the world-mapping programme of the USSR and its Warsaw Pact allies we need not only to study the Russian central nexus and its products, but also to examine each of the many peripheral contributors to the project. Several contributing countries are now members of both the EC and of NATO, but whether this will help or hinder public examination remains to be seen.

Acknowledgements

I am very grateful to John Davies and Desmond Travers for providing me with a copy of the English edition of Dagmar Unverhau’s book (cited above). John Davies also commented on a draft and helped me with details of the Russian mapping of Britain. I am also deeply indebted to the late Ilona Plehn (1945 - 2007) for teaching me German, and to her and her husband Werner for inviting me to see the GDR before its fall.

Note on sources

Many of the documents cited in this report were originally subject to security restrictions. To the best of my knowledge and belief these have all now been lifted, leaving these documents legitimately within the public domain.

Lt. Col. A J Ayers

We were sad to hear of the death in January of Lt. Col. ‘Tiny’ Ayres. In a letter to Rodney Leary, his wife, Marjorie, writes, ‘I think that I can say that he was a bona fide member of your Society, having served with Ordnance Survey twice during his career. Firstly as ADO based in Kidderminster from 1952 to 1956 and at Chessington at a later date.’

‘Two years on secondment to the “Colonial Surveys” in Uganda gave him rugged experience of surveying, I imagine, and his claim to fame must be that of gracing the dust cover photograph of Alastair Macdonald’s œuvre Mapping the World,¹ taken by myself may I add!’

Lt. Col. Ayres also served in Palestine, Malta and Washington, and as CO of 22 Map Production Squadron, RE.

While the making of maps was a professional interest we cannot claim that our Society was Tiny’s most important leisure time activity. The Sunbeam Club News for February 2007 records his life-long passion for vintage cars and old motorcycles, and pays tribute to his drive and commitment in many years as chairman and president of the Sunbeam Motor Cycle Club.

Figure 4: Part of Lehrkarte 1:100,000 Blatt G (N-33-133 Strasen) (1981), showing the city centre of Dresden in mirror image
Slovenia, June 2007

Slovenia, once part of the former Yugoslavia, and previously of the Austro-Hungarian empire, joined the eurozone in January this year. We found a small, forward-looking country with high quality infrastructure, wonderful scenery and very friendly population. The efficiency of the services and the helpfulness of the people were proved when one of our group sustained an injury on a mountainside and was very satisfied by the procedures and treatment at the local A&E department.

Our group of twelve visited three localities: Ljubljana, the capital city; Piran, ancient Venetian port on the Adriatic coast, and the Bohinj valley, an Alpine winter and summer resort nestling below Triglav, the country’s highest peak. The contrast between the Italianate architecture of the coast and the Austrian-style chalets in the Alps was particularly striking.

Our objectives were to investigate Slovenian mapping, new and old, and to learn something of the history and geography of the country. Our hosts were most forthcoming in helping us to achieve both.

Ljubljana is a delightful city presided over by its castle towering high above the centre. Here we visited four venues: the Surveying and Mapping Agency, the government agency responsible for topographic and cadastral surveys; the National and University Library, where a display of historic mapping was laid out for us; GZS, the country’s leading commercial map publisher, and the Geodetic Institute, a state-owned research body who cooperate closely with SMA. Reports of these visits appear below.

Slovenia has a very short coastline, some 46 kilometres on the Adriatic. The land to the north, around Trieste was ceded to Italy after World War 2, whilst the sea border to the south, adjoining Croatia is currently the topic of dispute between the two countries, because in Yugoslavian times this border was not legally delineated. Our glimpse of this coast, at Piran, was to see the Maritime Museum, overlooking the ancient port. This is a treasure trove of archaeological remains, model ships, pictures, charts and related items. On the way back we broke the journey to view the magnificent Skocjan caves, a UNESCO world heritage site in the midst of the original Karst country.

Our final excursion was to the Julian Alps, north-west of the capital, for a brief exploration of the head of the Bohinj valley. Although a minor accident and bad weather curtailed our intended expedition, we did enjoy the magnificent mountain scenery and Alpine wildflower meadows the region offers.

John Davies

On the opposite page (top) a detail from one of treasures on show in the National and University Library: the magnificent cartouche paying tribute to the ducal sponsors of this map of 1744 by Janez Dizma Florjančič (Joannes Disma Florianschitz de Grienfeld).

Below is one of a series of attractive coastal tourist maps for use on both land and water produced by GZS, under their Kod & Kam (‘whence & whither’) brand name. This 1:100,000 ‘Istra’ sheet shows conventional signs for a harbour with seasonal customs facilities at the Kanegra complex, as well as a campsite and a naturist campsite. The Slovenia – Croatia border is marked south of the area of saltpans. Its seaward continuation is a matter of contention since on its exact line depends whether Slovenia has access to the open sea without the need to cross the territorial waters of its neighbours.
The Surveying and Mapping Authority of Slovenia (SMA)

The headquarters of SMA are located in a multi-storey office block in a mixed residential/commercial area of Ljubljana. We walked from the hotel to the offices and took the opportunity to look at different parts of the city especially the large open air market and riverside buildings. The SMA building identifies itself by two plaques, one with its name and another giving its latitude, longitude and altitude.

We were welcomed by Dr Božena Lipej, Deputy Director General of the SMA and Marjana Duhovnik, a head of department. Dr Lipej began her presentation by stating that the SMA was part of the Ministry of Environment, Spatial Planning and Energy. In addition to the Head Office there were twelve regional offices and together these employed over 500 staff about half of whom were surveyors. The SMA was under pressure to reduce staff and since Slovenian independence some work and staff had been transferred to over 200 private sector companies. In the public sector the Geodetic Institute and Ministry of Defence shared some responsibilities with the SMA. The SMA was organised into five sectors, Geodesy, Real Estate, IT and Data Issuing, Legal, and Financial.

The Geodesy section was responsible for developing the cartographic system and topographic databases, the basic geodetic system, which included a network of GPS stations, links with systems of other countries and the register of geographic names. However it was in the field of real estate where the SMA had placed increasing emphasis. The ownership and exchange of land and property was becoming increasingly important in the Slovenian economy and in 2000 the Real Estate Registration Modernisation project was begun with financial aid from the World Bank and Slovenian government. It was recognised that existing real estate data was out of date, unlinked and incomplete, and that the three fundamental records, the Land Cadastre, Building Cadastre and Land Register, had to be computerised. Existing paper records and maps were scanned, aerial surveys undertaken and digital orthophoto maps made for all Slovenia, leading to digital cadastral maps for about five million land parcels. The Building Cadastre records details of ownership and use of each floor and, while some information could be obtained from Land Registry records, it was necessary to employ temporary staff to interview owners and send out questionnaires to obtain further information. In response to questions Dr Lipej said it was often difficult to
contact owners, especially those who lived overseas or owned property which was derelict or rarely used, but she thought that by the end of 2007 the survey would have been completed. The Land Registry paper records were being digitised and the delays in land registration had been greatly reduced. The SMA was confident that the new real estate systems would ensure that all changes were recorded quickly and accurately and that much detail would be available through the Internet. Property rights would be protected, investment in real estate encouraged and an efficient and fair system of real estate taxation established. The information would be of major importance to authorities engaged in such areas as housing and spatial planning.

Marjana Duhovnik then gave a presentation on developments in mapping and cartographic databases. Basic topographical maps at scales of 1:5000 and 1:10,000 existed but after about 1996 these were no longer updated because of cost. Information is now obtained from the High Accuracy Topographic Database derived from aerial photographs. In the 1990s the SMA began to produce National Topographic Maps at 1:25,000 and 1:50,000 scales in co-operation with the Ministry of Defence. The project was completed in 2005 with each sheet having a military and civilian version. It is intended to revise the maps in four to five year cycles. National General Maps exist at four scales from 1:250,000 to 1:1,000,000 but they are being revised to a uniform system. A new 1:250,000 sheet was produced in 2005 and the data conforms to the requirements of the EuroRegional Map. Slovenia began aerial surveying in 1971 and now the whole country has been surveyed in colour by digital techniques. It was explained that two of the scales of aerial photographs, 1:17,500 and 1:28,000 were chosen because one photograph sheet covered one sheet of the topographic scales of 1:5000 and 1:25,000 respectively. The SMA also produced digital elevation models and a digital relief model.

Finally there was a brief reference to three further databases, of geographical names, spatial units, e.g. house numbers, and public infrastructure, e.g. transmission lines. At the end of the meeting the group was given maps, brochures and a CD about the SMA. We expressed our thanks for a very interesting morning which had shown how an organisation similar to Ordnance Survey was responding to many of the same pressures and opportunities.

Frank Prest
Renata Šolar shows the riches of the National and University Library to an eager audience

National and University Library

Our second visit was to the National and University Library – Narodna in Univerzitetna Knjižnica to see the map librarian, Renata Šolar. The building was designed by Jose Plečnik (1872-1957) and is seen as a bastion of Slovenian culture. We saw the disappearing karst lake, Cerkna, in the epic 3,532 page *Glory of the Duchy of Carniola*, 1687, by Janez Vajkard Valvasor (1641-1693), which is now seen as the key early Slovenian work, though he wrote in German. His map of Carniola was produced in 1681. The weird lake is three to four times bigger than the surface of Lake Bohinj, the biggest permanent lake in Slovenia, yet you go to see it and bang, it’s gone.

The first map with Slovenian names, by Peter Kozler, only appeared in 1853. We were entranced by the castle views in *Topographia Ducatos Carnioline* of 1679, and now available in a modern reprint. Jonathan and Jacqueline Roberts found a print there of the castle in which they were married. The first measured map of what is now Slovenia was produced after ten years work by a Cistercian monk, Florjančič, in 1744, and he was the first to say Triglav was the highest mountain in the country.

Renata has the usual problems of map librarians: shortage of space, with locked cabinets located along corridors. After 2006 Slovenian copyright law changed, and digital maps were provided on paper only when printed. This means large scale maps at 1:5000 and 1:10,000 are not provided in the national library and no support is given to keep maps produced using older software available. The library would like the mapping agency to keep the old discs running, but this may not happen.

The Geodetic Institute of Slovenia has digitised 68 maps at 600 dpi under contract for the library. You can see them by going to [http://www.nuk.uni-lj.si/nukeng.asp](http://www.nuk.uni-lj.si/nukeng.asp) which gives the
English version of the entry pages. Click on the fourth option down: dLib.si – The digital library of Slovenia, and in basic search type zemlj evidi then click on search. Click on maps on the next page, scroll down and click on link. If no map appears, click on Express viewbase for the software, then on link. The maps can be magnified and moved, and saved as .tif files by right clicking on the map and then on Save As …. The next maps to be digitised will be the Austro-Hungarian 1:74,000 military series produced around 1766.

Graham Steele

Geodetski Zavod Slovenije (GZS)

GZS occupy the same building as SMA, so this was a return visit to the place where we started yesterday. Our host was Andrej Šegula, adviser to Managing Director Rudi Zavrl. Mr Zavrl himself sent his apologies; he is a UEFA official and was required to attend an important match in Budapest (which we all agreed took precedence!). Mr Šegula introduced Radomir Vučkovič (business manager), Darko Tanko (technical manager) and Vili Kos (cartography manager), who between them presented three hours of information and displays.

GZS was founded in 1947 by the Slovenian Socialist Republic and was privatised in 1997. Current turnover is about seven million euros with about 120 employees. They are now the major commercial cartographers of Slovenia and other parts of former Yugoslavia and have recently opened an office in Macedonia. About 75% of the sales are domestic.

Main activities of GZS are cartographic products, aerial photography, photogrammetry, cadastral geodesy, surveying and production of geodetic software. The range of commercial cartographic products includes touring maps, nautical maps, mountain maps, topographic maps, town plans, road maps and school atlases. We were particularly impressed with the local maps having a large scale town plan on one side and 1:50,000 district map on the other. We were also interested to hear that the company owns its own light aircraft for aerial photography and that this is also used for the transportation of patients to hospital.

The company encounters some competition from the state-run Geodetic Institute, who produce some similar commercial products.

GZS also operates a well-stocked map and equipment shop in the city centre, Kod & Kam, whose manager, Jana Knific displayed a selection of their range for us to examine and purchase. The Kod & Kam website, from which GZS maps and others can be purchased, is at http://www.gzs-dd.si/kod&kam/kod&kam_en/index.htm

Gerry Jarvis

Jana Knific found ready buyers for GZS maps
In the afternoon, we made our way along the banks of the Ljubljanica River to the third institution in the national mapping trinity, the Geodetski Inštitut Slovenije (or Geodetic Institute of Slovenia), which is housed in the same building as the Faculty of Civil and Geodetic Engineering of Ljubljana University. We were warmly greeted by Dalibor Radovan (Head of Research), who had an information-packed presentation waiting for us.

Established in 1953, the Institute of Geodesy and Photogrammetry was reorganized in 2000 as the Geodetic Institute of Slovenia, which currently operates under the Ministry of the Environment, Spatial Planning, and Energy. The Institute has about forty employees, some of whom also lecture in various aspects of Geomatics at the Faculty of Civil and Geodetic Engineering. Unlike GZS, which we had visited that morning, half of the remit of the Geodetic Institute is for public services: undertaking surveying and mapping and providing research, development, and technical expertise for SMA, the national surveying authority. The other half, however, is for public tender, where the Institute may find itself bidding against the two hundred or so other geodesy companies in Slovenia. Within the commercial dimension it therefore is inevitable that the Geodetic Institute frequently finds itself in direct competition with the GZS – an arrangement that is considered healthy for the provision of quality maps! (A map of Maribor produced by the Geodetic Institute won first prize at the International Cartographic Association conference held in Canada in 1999.)

One of the key activities of the Geodetic Institute is the production and maintenance of several national topographic map series and databases, at the scales of 1:5000/1:10,000, 1:25,000, 1:50,000, 1:100,000, 1:250,000, 1:500,000, 1:750,000, and 1:1,000,000. The Basic Topographic Chart produced at the scales of 1:5000 and 1:10,000 comprises over 3000 sheets, whereas the 1:1,000,000 map reduces Slovenia neatly onto an A4 page. The Institute also undertakes photogrammetry on behalf of SMA, with cyclic aerial surveys performed every three years for the production of digital orthophotos at 1:5000. These also provide the base material for the national digital elevation model (DEM) at 1:25,000. In addition to maintaining the national toponymic gazetteer of some 200,000 names, the Geodetic Institute produces tactile maps for selected city areas at 1:1000 and also issues a wide range of thematic maps.

The Geodetic Institute has recently been involved in a major project to establish and maintain the national geodetic service. This comprises a permanent geodetic network, which ensures that Global Positioning System (GPS) readings taken in Slovenia are accurate to within 2–3cm. According to our host, Slovenia is currently the only country in the world to have had its entire coastline measured by GPS. Not particularly challenging, perhaps, when considering that Slovenia has a coastline of just 46km, but in light of the results of the GPS survey one may have cause to think again – it had doubled in length!

Another significant area of responsibility is the maintenance and development of the national land cadastre. One of the modern tasks has been to transform the local co-ordinate systems utilized in surveys dating...
from around 1825 to the national grid. Today, the national cadastre incorporates a 3D computer model of every building in Slovenia and, as we had heard at SMA, 2000 people are currently visiting the occupants armed with thirty questions (e.g., pertaining to the forms of telecommunication in use) in order to augment and update the existing database. Other activities undertaken by the Geodetic Institute include natural hazard monitoring (such as landslides and the retreat of the Triglav glacier) and the analysis of satellite imagery for applications in agriculture and topographic cartography.

The visit to the Geodetic Institute confirmed the view that Slovenia enjoys an astonishing concentration of cartographic activity and quality. What is perhaps more significant is that the country maintains a cartographic tradition of which their two million inhabitants are deservedly proud.

Alexander Kent

Pictures by John Davies, Chris Higley, Gerry Jarvis, Graham Steele and Gerry Zierler.

My thanks to John Davies not only, personally, for organising such an informative and enjoyable expedition but also, as editor, for compiling this report with a wrist in plaster and against a very tight timescale. A short paper by Renata Šolar and Dalibor Radovan on the historical maps in the National Library and their digitisation may be downloaded in English from hrcak.srce.hr/index.php?show=clanak_download&id_clanak_jezik=4113 – there are more stunning pictures. – CJH

Dealer’s diary – an occasional update

Roly Hann

Before ‘revving-up’ my journalistic pen on the starting grid for this article I thought it would be sensible to re-read my ‘Dealer’s diaries’ written in 2004. Times have changed. Now there are fewer antique fairs, fewer book fairs and probably fewer bookshops. Whereas three years ago I found myself often visiting two or three antique fairs on a Sunday morning, there are weekends now with no fairs within reasonable driving distance.

This decline is balanced by an increase in buying and selling activity on the Internet. Much to my surprise I find myself a part of this cyberspace revolution. I suppose it’s a case of ‘if you can’t beat them – join them’. This does mean less social contact with antique and book dealers, which is a pity. Having chats with one’s colleagues is a very pleasant way of doing business, rather than clicking keys on a keyboard. In truth selling maps on eBay has widened my customer base dramatically, so for that I am most grateful.

January – April 2007

A very sluggish start to the year as I drew a blank at the big antique fair in Winchester on New Year’s Day, another blank at a book sale near Andover three weeks later and a third blank at an antique fair the following day. How rubbish is that?
It is clearly a sign of the times that my first significant OS purchase of the year was from an Internet auction. Offered for sale was a 1927 copy of *A Description of Small Scale Maps* which the seller said contained a number of associated leaflets from the 1930s. Tantalisingly added to this was another snippet of information stating that members of the Charles Close Society ‘might be interested’. Normally there are problems for dealers such as myself trying to buy on the Internet in that keen collectors are obviously prepared to pay more for an item. However I decided that after weeks in a buyer’s wilderness it was time to gamble on a hunch and overbid for the booklet and hope the contents would compensate with added value (this reads like a supermarket offer!). Well, my bid was successful but if the contents of the booklet were rubbish I would be selling on the booklet at a loss. An anxious couple of days followed waiting for the parcel to arrive.

The doorbell goes ‘pong-ping’, there is a distinct postman shape the other side of the frosted glass of the front door. I sign for my parcel and park it on the kitchen work surface. Milking the moments of anticipation to a ridiculous degree I rummage in the kitchen drawer for the wonderful wooden Canadian letter opener which I bought for my wife during a holiday in the Rockies last June. With skilled precision on a par with keyhole surgery I slice open the package. What a result! Inside the booklet are four point-of-sale leaflets and some other items of OS interest, including a six-page folded leaflet promoting and itemising the Ordnance Survey exhibition at Bumpus Bookshop in Oxford Street in 1933. My January buyers-block gloom instantly vanishes. The world is truly a wonderful place.

The first Farnham Book Fair of 2007 is held early in February and it is about two months since I last purchased any OS maps. But the wind of change had arrived in the shape of a fellow dealer who offered me a large box of maps. This was early in the morning in the car park before the doors had opened and he brought the box across to my car. There is always a frisson of excitement before one looks in a box or bag of maps. The maps had been thrown into the box rather than stacked and I could see that all those on top were maps from the 1960s/70s, so I rummaged underneath and revealed a large deposit of finely shredded map paper with several tiny black pellets scattered around. Yes, you’ve guessed it – a cosy nest for a family of mice! I called my colleague over to show him and he said that he had put the box in his garage before Christmas, just when mice are searching for winter quarters.

It must be said in their favour that these mice were astute and discerning in their choice of nesting material, avoiding all the modern maps and targeting the pre 1914 examples, probably because the quality of paper and cloth was better then, or maybe they liked the glue. Opening up some of the partially damaged maps revealed some very artistic mouse nibbled patterns – rather like the dancing men my dad taught me how to make using a tightly folded newspaper and a pair of scissors in those distant childhood winter evenings before the arrival of television.

Perhaps it might be possible to train mice to act as paper shredders in all government departments thus saving energy from the power-guzzling ministerial paper shredders. This would certainly get the green vote. There might also be a use for the mice droppings, using them to fuel Civil Service staff coffee machines. After all, the Tibetans use yak dung to brew their tea.

Back to the box of maps. I found a buyer for the post 1940 maps for my colleague and rescued a few others for myself including a ten-inch geological map, a Royal Parks (Richmond Park), some Irish maps and a 1909 Manoeuvre Map very slightly nibbled. In fact I have now used the words ‘slight mouse damage’ for the first time on one of my price labels.
During the day a customer approached me and asked if I wanted to buy some Irish maps. There were about seven or eight from 1900s to the 1950s. In my pre-Internet days I was not that interested in Scottish or Irish maps as they are difficult to sell at book fairs in the south of England, but they do sell quite regularly on eBay. So I bought them. From no map purchases for two months to forty maps on one day! My stock looks a bit healthier.

Most people would agree that the civilised way to begin a very wet Sunday morning would be coffee, Sunday papers, favourite armchair and a scruffy but loyal dog at one’s feet. The really silly way to start such a morning is to leave early before the papers are delivered and drive thirty miles through lashing rain and giant puddles to a small town in West Sussex where there is a book fair. There was very little traffic on the A272.

A swift tour of the room registered the expected zero for Ordnance Survey interest: although there was an untidy pile of folded sheets on one table, alongside which was a little bit of paper with the words ‘Maps – 20p each’. I sifted through the pile in a rather half-hearted way and ended up buying a few. One of which was a 1963 1:1250 plan of somewhere in Sutton and Cheam. I am not sure why I bought this. I don’t know anyone who lives in Mulgrave Road or Grove Road. On the bright side I bought some rather nice books which should help pay for the morning excursion.

For quite some time I have been a keen regular at the monthly book sale held in a village hall in north-west Hampshire. It is well stocked and well organised with thousands of books at competitive prices. It attracts book dealers from miles around, certainly as far as South Wales. Even before the doors open at 10:00 a.m. a queue of about thirty to forty will have formed – almost all of whom are dealers. Last Saturday, as usual, I joined the queue at about 9:45 but there was nobody I knew close to chat with so I spent the time surreptitiously studying my colleagues. Most of them are certainly not well-groomed or snappy dressers. Scruffy jeans, shabby coats, not very clean shoes, rather unkempt hair and the occasional smoke of ‘roll-your-own’ cigarettes. The men, if anything, are even worse! At 10:00 the doors open and there is a sort of slow motion courteous stampede. The dress code might be ‘gardener’s winter wear’ but everyone is extremely polite.

I bought a few books and some maps but nothing of heart-stopping interest. One of the books was a large format paperback entitled Ancient Landscapes of the Yorkshire Wolds, published by the Royal Commission on the Historical Monuments of England. For bedtime reading I suppose this would not be very high on the ‘wants’ list, but I was attracted to it because I noticed a folded map sticking out of the book. The map was compiled and printed by the Ordnance Survey and the title included the RCHM logo with ‘Map 4: The Southern Wolds’. I checked the contents page, the Chairman’s foreword and the acknowledgements page and could find no mention of special OS maps. With the help of my new friends, Google and Abebooks the mystery was solved in that a boxed set of four maps was produced to accompany the book. Although, obviously, I have bought an incomplete item, firstly, the book and map were inexpensive and secondly the Hann learning curve extends further upwards.

My annual winter walking holiday in North Wales almost always involves visits to one or two bookshops which are almost always devoid of interesting OS maps, hence I am almost always disappointed. Before the recent visit I decided on a more systematic approach and had carefully listed all the bookshops and their addresses. Most of them are along the north coast which is quite a long way from the farmhouse that I rent near Trawsfynydd. The plan was to use a wet day to drive on a tour of bookshops as a rest from walking in the mountains.
However, since my last visit the owner has added a games room with a pool table and a table tennis table. The dilemma I faced was whether to spend the day driving miles and miles in the pouring rain on a book shop tour and probably returning empty handed or spending the day playing pool and table tennis with my friends and drinking the occasional glass of alcoholic beverage. No contest – book shop tour aborted!

The day after my return I visited the Wilton Book Fair near Salisbury. This seems to be one of the few book fairs still flourishing and I came away with two third editions and a hand-coloured map of the Tunbridge Wells area. The following Sunday was all blue skies and sunshine so the drive to the Bloomsbury Book Fair in London was easy and carefree until a diversion for road works near the British Museum sent me in the wrong direction, but much to my amazement the diversion signs actually led me to a parking spot close to the book fair. I stopped exhibiting in London over a year ago and this visit was partly for buying but also for chatting and basically, showing my face. I think this is now called ‘networking’.

My rewards were an Aldershot (south) district map (black car cover), an early geological map of Oxford in an OS cover and a few other less interesting maps. I experienced a brief zephyr of schadenfreude on leaving my former colleagues at lunchtime in the knowledge that I would be home hopefully watching England beat France at Twickenham whilst they were imprisoned in the windowless Royal National Hotel until late afternoon.

The following weekend I was in my own backyard, i.e. the Winchester Book Fair. It was a busy day with visits from a handful of CCS members and hence plenty of map chat. It is always an agreeable experience when a new OS map collector appears on the scene. I think this particular gentleman had bought a few of my maps at a previous book fair and this time I steered him in the direction of the CCS website, so hopefully the membership will increase by one.

A call from a friend who runs a book shop in a small town in north Hampshire was brief and succinct. He said that he had bought a large box of maps, mostly they seemed rubbish and that he had probably paid too much for them – and would I come and have a look just in case there was anything of interest. Well, he was correct on all four counts. It was a large box, they most definitely were maps, even more convincingly they were mostly rubbish and even though I don’t know what he paid, it must have been too much. Hopefully the advice I offered will enable him not to repeat the error.

A wonderfully sunny and warm Easter Weekend with no local book fairs or antique fairs apart from the regular bank holiday fair at the leisure centre in Winchester. Even this popular event is fraying at the edges with some gaps between tables and some obvious dealer ‘overflows’ on to neighbouring tables. As visiting ‘trade with card’ I am able to arrive very early and dash around before the general public. On one of the tables was a small tray of assorted maps at the back of which were two WW1 French maps in a plastic envelope. The scale on the front of one was 1:10,000 and I wanted it to say ‘Trench Map’ but it didn’t. When opened it was in fact a 1916 outline map with a legend prepared for trenches and other military information but no symbols or colours. A blank canvas waiting for the military surveyors to complete. It is the sort of item which might generate interest on eBay, but I will probably keep it for the map market.

The weeks that followed were very similar to the barren weeks in January. Very many miles travelled with not much in the way of new stock. By nature I am a bit of an optimist so the undiscovered cache of rare maps is always just about to be revealed. So, watch this space!
A lot of members will know Alan Godfrey as a reprint publisher, specialising in Ordnance Survey large scale maps. Others will know him as a founder member of our society, its first Membership Secretary, and at one time concurrently Treasurer. A few will also be aware that he is someone who really knows how to celebrate in style. Last winter saw the publication of his 2000th map, and the 25th Anniversary of the first maps issued. Certainly something to celebrate.

Alan started selling old Ordnance Survey maps whilst in Shrewsbury in the 1970s. After moving to Newcastle in 1980 he issued his first group of reprints in 1981. I can remember his catalogues stating that he conducted his used map business in the mornings and the infant reprint business in the afternoons. Things quickly took off and he relinquished his society posts, having used his business to introduce a vast number of our early members to the society, setting us on the path to success.

Within a couple of years, the reprint business became the sole occupation, based on a winning formula that has not changed noticeably since. Most maps have a period photograph on the front cover, an essay describing what the map shows and an extract from a local trade directory. Most maps are 1:2500, reduced to about 15 inches to one mile. I think that most
were initially town centres, but now interesting industrial sites are also included in the series. Currently, each map sells for £2.20, with a large discount for anyone subscribing to a series of maps. A good number of our members have subscribed since the start, and hold complete sets of The Godfrey Edition.

To celebrate, and to say thank you to a few of the people who have helped make the maps a success, Alan wanted friends to relax and join him in his love of opera. A celebration with opera, wine and friends. So, after a preliminary local party, invitations were sent in November asking people to continue the partying by attending a Godfrey sponsored reception at the London Coliseum, in conjunction with Opera Rara, followed by an informal discussion about the business the following day. This was such a success that Alan is considering bringing some of his authors together on a regular basis.

However, the main event came on 28 March when Alan, with the help of Derwentside Council, arranged for an opera by one of his favourite composers, Donizetti, to be brought to Consett’s Empire Theatre. A party of 58 people included nine of his authors, others who had helped with the series and many friends, while local people rallied round to provide what the company called ‘the best audience they had had’.

When we arrived at the theatre, a large banner proclaimed that Alan Godfrey Maps had sponsored the evening’s performance of Swansea City Opera’s production of La Fille du Regiment. For those travelling some distance and staying in Ebchester as his guests, buffet refreshments were provided at the hotel before a coach took the party to a champagne reception in the theatre’s hospitality suite. A second, concurrent champagne reception was held downstairs for ‘locals’. If you dared venture into the foyer during the interval, one was plied with drinks, merely to whet your appetite for the drinks and buffet after the performance, to which the cast were invited. In true party tradition, everyone was given a goody bag when leaving. Now, I am not known for being a merry soul at such events, drink little and have only ever ventured to one opera before, but I thoroughly enjoyed myself, had a wonderful time and met some exceedingly nice people. A proper 25th anniversary celebration.

The hotel residents met again at breakfast before we all drove to Alan’s premises in Leadgate, were shown around, and told all about the running of the venture. Alan disappeared for a discussion with some of his twenty-odd authors, and gave most of them several maps to work on over the coming months. After tea (thankfully), a conference was held in Alan’s office, which was attended by everyone, and gave us a chance to say thank you and to offer constructive comments on the business and the future.

What struck me most about the authors was their enthusiasm for the maps and the essays they write. Although some are familiar names, and known nationally, others well known in their own locality, with a few just starting, all seemed so devoted to what they were doing and thrilled at being part of the Alan Godfrey family of authors. Such a feeling is certainly reflected in the quality of the essays and overall feel to the various map series coming out of Leadgate.

Alan has always been good at publicity, as was seen in the early days of our society and throughout his map publishing career. He sponsored a British Cartographic Society award for local history librarians, frequently hosts visits, and grabs headlines whenever possible. So, a celebration with a little publicity was inevitable, but such lavishness was exceptional by any standard. Maybe he will be asked to advise on our 30th Anniversary?


Creag Doire nan Nathrach et al

Peter Warburton

Creag Doire nan Nathrach, to which Peter Haigh draws attention in Sheetlines 78, 65-66, is the most extreme example of a small category of hills where initial substantial altitude errors remained uncorrected for a hundred years and more. In this case the correction was first made in 1984 on the 1:25,000 scale when a different name, Sron a’Choirce Chnapaich, was given to the immediate summit. As Peter Haigh notes, new contours to 830m (raised from 686m, earlier 2250ft) and a spot height of 837m appeared on the 1:50,000 scale in 1993 although it was not until the B1 revision of Landranger 51 in 2002 that the Sron (‘nose’) name was transferred to the smaller scale sheet.

The hill had not been entirely neglected since the first survey of 1870. The neighbourhood was evidently visited during the Third Revision in 1927. On Sheets 46 of the Second (1897) and Third (1907) Editions a prominent line of cliffs is marked flanking the western slopes. The Popular Edition of 1927 substitutes a generous scatter of crag markings. Before that edition the contour interval above 1000ft had been 250ft so that, until then, only the 2500ft contour was missing, the height in feet being 2746. The opportunity for revision provided by the change to a 50ft interval was not taken. This seems to have been a general policy decision. Richard Oliver comments ‘Once the initial contouring was completed in 1890 it was generally left as it was’. 1

A surprising aspect of the Creag Doire nan Nathrach case is that the error escaped the notice of that keen body, the corps of mountain statisticians. Perhaps the few who ventured this far, map in hand, while the hill was portrayed in 2250ft guise had confidence in their own navigational skill so undermined by the experience that silence seemed the prudent course. As there were no significant changes to the heights of either of the adjoining cols, the hill, as correctly measured, satisfied the two criteria of Corbett status, i.e. height in the 2500-3000ft range and a minimum all round drop of 500ft, and so it was added to the Corbett list in 1984, under the Sron nomenclature.

Beinn Tarsuinn (the one near, if anywhere, Kinlochewe) in contrast was the subject of a century of persistent gentlemanly indignation. From its first map appearance in 1881 the top contour of 2750ft failed to convince the amateur experts and indeed it seemed to defy the evidence of trig. point values on nearby summits. A steady trickle of climbers wielding aneroid barometers reported their findings. Mr Phillip made it 2980ft but Mr Parker, Mr Gall Inglis, Mr Rooke Corbett himself and several others, all acting independently, said 3080ft and Mr Hirst came in at 3075ft.

The great question that then arose was whether it was ethical to classify as a Munro a mountain that the ultimate authority maintained fell seriously short. In 1929 the OS added two separate 2800ft patches to the summit and, within one, a 2850 contour: amendments which failed to silence the critics. The status dilemma was half resolved in 1953 by the inclusion of the hill in the approved list but without a number in the order of altitude column. In 1976 the OS repented: Beinn Tarsuinn was contoured to 930m and in 1996, on Landranger 19 (A2), a spot height of 937m (3074ft) was added. Well done, Mr Hirst! Beinn Tarsuinn was legitimised in 1980 as number 246 and raised to 238 in 1997.

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In reference to the OS survey of 1874 Mr Phillip wrote ‘The map of this part was very casual; I think the O.S. had bad weather, and were hurried in order to meet the views of the then laird’. Bad weather is not satisfactory as a full explanation of major errors since parties normally remained encamped in their survey area long enough to check doubtful data, but the views of the laird could prove a serious factor when translated into active non-co-operation. The aim of many proprietors and their shooting tenants was to make deer forests as nearly as possible into exclusion zones. To that end they were able to use their influence with the licensing authorities to secure the closure of local inns and their own authority to prevent employees taking in guests. Survey parties could not be refused entry but practical assistance could be withheld. Camp life in remote mountain country became more arduous if parties were denied the help of keepers in such matters as the bringing in of supplies by estate ponies or the location of safe stream crossing points.

There is no suggestion that difficulties of this sort were involved in the case of Beinn an Lochan (Glen Kinglass, Loch Fyne) which remained a gift to the argumentative for decades. It also differs from most other examples because it concerns an overstatement of altitude. The compilers of the Munro lists used six-inch map data as primary source and on that basis a spot height of 3021ft ‘150 yds NE of the 2995 point on the one-inch map’ was judged to be the true summit. However there was never any trace of this 3021 point on one-inch sheets and, worse, the 2995 point subsided to 2992 and, at the 1904 revision, to 2955ft where it has remained as 901m. The complication was that the 3021 reading was not disavowed by OS until the 1970s. Beinn an Lochan therefore retained its bogus status as a Munro until 1981.

These and other lapses notwithstanding, it would be unreasonable to find fault with the first survey of the Highlands. To come upon the remains of the original camps, especially in wet weather, in such inhospitable locations as the highest of the Paps of Jura, the Ben Macdhui summit plateau or high above Glen Affric increases one’s admiration for the stoicism as well as the professional competence of the survey parties. Students of the archives would no doubt find material for an article on the subject of the original survey camp sites. Armchair anoraks, as well as mobile wearers of the garment, would welcome a study that, by omission, distinguished, sappers’ bothies from that other montane rarity, the seasonally occupied deer watchers’ look-out.

The scope for dramatic errors in altitude outside Scotland is limited but Moel y Faen and its neighbour Moel y Gamelin in Denbighshire provide two outstanding examples. What is remarkable is that both are within a mile or so of the A542 Ruthin-Llangollen road near the Horse Shoe Pass in an area extravagantly supplied with trig. points. Furthermore the immediate surroundings were systematically revised to plot the spread of the Moel y Faen slate quarry workings and the development and decline of its tramway network. The illustration, from SJ 14 (B) of 1956, with correct heights added, shows Moel y Faen with eleven 25ft contours missing and Moel y Gamelin lacking five. The same situation was represented at the one-inch scale until 1961 when late Seventh Series sheets 108 corrected Moel y Gamelin by the addition of 1800 and 1850ft contours, and a spot height of 1897ft, but left Moel y Faen at 1500ft. Curiously, that same 1897 figure is to be found on the last, 1893, issue of Old Series sheet 74 NE. J B Harley, in his cartographical notes to the David & Charles reprint of this State, writes that spot height values ‘have been revised as a result of

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3 The same version, Margary state 20, is used on Cassini Old Series sheet 116 where 74 NE is unhelpfully listed only under its first publication date of 1838.
re-levelling in the area.’ Bartholomew picked up the 1897 figure but the OS dropped it. I do not know about intervening editions but on Third Edition Large Sheet Series 51, revised in 1903-04 and published in 1908, there is no spot height and the top contour is at the familiar 1750ft level that survived until 1961. No such complication affects the cartographic history of Moel y Faen which was still misrepresented by a 457m (1500ft) contour on Landranger 116 as recently as 1980. The true altitude of 548m was first revealed to Pathfinder customers on SJ 04/14 (A) in 1982. Apart from an obsession with largely non-existent grouse butts, current mapping of these hills is immaculate.

In cataloguing OS failings it is relevant to bear in mind the status quo ante. In this connection I would nominate Mealfourvoumie, a hill overlooking Loch Ness on the western side as the star turn, the most striking instance (+776ft or 34%) of earlier visionary mapping.

Successive editions of Black’s *Picturesque Tourist of Scotland* gave the height as 3060ft and in the 21st edition of 1876 there is a map to prove it. Other maps in the volume were provided by Bartholomew but the Caledonian Canal map is exceptional in omitting any mention of source. Conspiracy theorists might wonder whether there had been editorial tampering. By 1876 the OS survey of the district was completed and Bartholomew could have been privy to salient features of the still unpublished material. Other guidebook publishers were quick to quote the OS height of 2284ft, as for example Baddeley and Hall. Black appears to have been a reluctant convert, but willing to compromise. In the text of their 1926 *Guide to Scotland North* the OS figure of 2284ft is used but on the accompanying map, credited to W & A K Johnston, the height is shown as 2700ft, a good round figure almost exactly half way between fact and fiction.

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4 M J B Baddeley, *The Highlands of Scotland*, third edition, London: Dulaun, 1884, 198. There is no good reason why the name of the establishment at which this volume was produced – the English and Foreign Steam Printing Works – should fascinate someone with no affinity to machinery, but it does.

The isolated peak of Mealfourvonie rises hugely but gracefully on the opposite side of the lake to the height of 3060 feet, and in its form bears a peculiar resemblance to a hay-rick, for which reason it serves as a landmark at a great distance. At its northern base, and on a peninsula overlook-

Mealfourvonie as depicted in Black’s guides: (above) the 1876 edition of ‘Picturesque Tourist of Scotland’ and (below) W & A K Johnston’s map in the ‘Guide to Scotland North’ of 1926
Kerry musings

David Archer

A friend had a large collection of railway postcards. As with cigarette cards, they came in various series and had an identification number or code on the reverse. One day, as he was sorting cards at a postcard fair, he realised that he was only looking at the codes and not the pictures on the front. At once, he decided that he was not going to pay vast sums just for publisher’s codes, and he sold his collection.

On Ordnance Survey maps, we tend to call them ‘print codes’, though frequently ‘reprint code’ would be more accurate. They are usually found somewhere in the lower margin, and over the years have come in different forms, giving details of dates of printing, quantity produced, edition, printers and place of printing. The earliest codes were dates, and added to the black plate were both more legible and cost effective, but nowhere as nice as blind stamps. The OS started with month and year codes such as 5.99 and 3.05, whilst Bartholomew used A28 or B28 (found top left of maps, indicating the first or second six months of 1928). Then the number of copies printed was added to the year, giving 400/1902 and 400/03. Although a code of 1,000 is usually assumed to mean that one thousand copies were printed, anyone who has seen a printer’s contract knows that about that number are delivered. An attempt was then made to withhold and disguise information by conflating 2,000/40 to 2040, and experimenting with unique numbers. With the birth of the A/ system, any reference to quantities was dropped, with the code sequence showing the chronological order of editions, and the degree to which they had been revised.

Never intended for the general public, codes have been very useful to the collector and anyone compiling a list of maps. I have several lists that I am trying to complete. With each, the first step was to list every state of the maps that I owned. I then listed the codes for states not held, but which were part of a print code string. There is of course, no guarantee that unseen maps will have differences other than the codes, but they are variant states because of the codes, and must be listed and sought. A print run element in a code should give an indication of how likely it is that one will turn up. All of this is pretty obvious, but not so, is the hidden danger in list compilation.

Once I started a comprehensive, in depth list, I found that I was not bothered whether I owned the maps, especially if I knew who had a copy. I just wanted more items to add to the list, and to have each item described in full. Again, the chase, but the quarry is a list entry, not a map. Eventually the list rules, and takes over from the map collection. A list of what is in the collection and what could be. A far more comprehensive and satisfying entity than an incomplete map collection. Entries are picked up here and there, hints from eBay that should be followed up, items passed on from other collectors, on-line library catalogues, Sheetlines and other CCS publications. All help with the search. Another person’s list, even of the same map series, holds no interest, unless they know something that you don’t. Many readers will have lists other than a wants list, and most will have noted something that nobody else has, that only they know about, and has never been mentioned in Sheetlines. Lists of covers for example, with a dozen different cover state and format combinations for Arthur Palmer’s Oban illustration. There are so many wonderful lists held by members, and all would be horrified by the age-old predicament: would you rather your collection or your list were destroyed? Very difficult. For years, I have kept a non-map list in the form of a birthday
book, with the aim of having an entry for each day of the year. Friends, neighbours, shopkeepers and postmen are all in it. I have two rules; I must know the person and I cannot ask for dates, restricting myself to picking them up when mentioned in conversation. One never knows when one will appear and like maps, great pleasure is obtained from filling a gap. A pointless occupation really.

It was Guy Messenger who first brought intensive cartobibliographical study of Ordnance Survey maps to the attention of most members. His work on the one-inch Third Edition highlighted the fact that a print code is not always attached to a single state of a map. The same print code can be associated with different versions of the detail in the map margin, giving different states. Others have shown that a code can be associated with different detail within the neat line. If print codes form the basis of any list, as they are so succinct, how would we get on without them? What would your wants book look like? You would have a descriptive catalogue of holdings, against which would be checked every map you came across. Very tiresome. Surely this is the case with those who collect Old Series maps? I have yet to see an Old Series wants list, but assume that it will be telephone directory sized. A collector of English Thirds (to use the shorthand) knows that there were at least five states of the Weybridge sheet with an 8.11 reprint code. So, including the original printing, six entries might be beside the sheet number in a list. But there are no codes for the Old Series and lengthy descriptions are needed to identify each state. Even if a map is identified in the Margary listings, which are now becoming rather dated, knowing that you need ‘Margary state 4’ tells you nothing when away from home. No, for Old Series maps, one would have to have a holdings list, which describes each state held, and which probably explains the dearth of Old Series wants lists.

My postcard friend was in a similar position to a lot of map collectors. All enjoy the thrill of the chase, tracking down and acquiring unheld maps (codes). And then. And then? Straight away they go looking for more, without studying those just purchased. Well, why should you get excited when the chances are that only the print code is different? So boring. Much more exciting to continue searching for other maps. New codes, even ones not known to you or anyone else who has a list of the same series. Ah, the list. To be carried everywhere, and pored over of an evening. Copied into a new book when it gets a little sad, when you run out of space or yet again decide to re-structure it and this time use different colours for maps held or needed (maps are always needed, never wanted or lacking). Compilers use symbols in case the book falls into the wrong hands, and all have sleepless nights deciding whether to have a name and address in it or not.

But if you are a true collector, rather than a map enthusiast, then the collecting is the all important thing. A map enthusiast will want two copies of the same map because they are different in some way, and it matters not as to what is different. But a true collector does not need a collection of maps and an empty bank account. A good strong list should suffice, as the hunt is the important thing. Find the maps, be in the position of being able to buy them, and then just tick the item on a list (or colour it). This certainly frees cash so that one can travel and look for more things to tick. But the chance of owning them must exist in order to tick.

What is the point of having lots of maps that one never looks at, just because one collects them? They are just trophies from the hunt. Golfers make do with score cards.

Searching for OS maps and actually buying them is similar to going on safari with a rifle. You return and mount an elephant head on your wall or put a map on the shelf, just to show
that you could do it. Much better not to buy them, to go on safari with a camera or your wants book, and return with a close-up photograph or tick; again, showing that you were able to do it. Ticks in your book also have the advantage that they don’t take up space or gather dust. Why not follow the example of bird spotters and have a life list and an annual one, thereby getting some advantage from looking at endless copies of Popular Edition sheet 133 or Seventh Series sheet 107?

Map review

Walks around Grantown-on-Spey, Footprint, Unit 87, Stirling Enterprise Park, FK7 7RP, ISBN 978 1 871144 74 6, £2.50.

This is a map/guide to eight walks on Speyside around Grantown-on-Spey, Carrbridge, Boat of Garten and Nethy Bridge.

When laid out flat, the printed sheet measures 600 × 210 mm, but the guide is not designed to he used unfolded. It is presented in an accordion-folded format with ten faces each measuring 210 × 120 mm. Two of these faces comprise the front and back covers. The front cover features a photo of a landscape with the emblematic Scots pine of the Caledonian Forest, which covers much of the area. The back cover is mainly text with a clear index diagram showing the location of the eight walks around Speyside.

The mapping is based on pre-1950 OS material with considerable augmentation from original fieldwork by Stirling Surveys and compilations from aerial photography.

The walks themselves are shown on the eight inner segments. The publishers recommend that the user selects his/her walk, refolds the sheet to expose the chosen route and replaces it in the transparent plastic sleeve with which the map is provided.

The individual full-colour maps are of differing scales and orientation designed to fit the spaces available. There are no scale bars but distances along the way are clearly shown at half-mile intervals on the delineated routes. The cartography is very clear, it would take some effort to lose oneself on any of the routes. The accompanying text on each map gives useful background information to add interest to the walks.

Recreational walking is well covered by numerous publications as a visit to any tourist office or visitor centre will reveal. The Footprint map/guides, in this reviewer’s opinion, are leaders in an increasingly popular field and are well worth taking on open-air excursions.

Bill Shirreffs

The Charles Close Society has around 600 members, most of whom are avid buyers of maps. The editor (at the address on the back cover) is always pleased to receive examples for possible review from any map series that has not already attracted notice in Sheetlines.

1 May be ordered online via the Stirling Surveys website at www.stirlingsurveys.co.uk/footprint.html
Letters

The World Map 1:2,500,000

One question in John Davies’s recent article is answered by the Proceedings of the London (1964) Geographical Congress. In a session devoted to the International Map 1:1M it was reported:

Finally the Chairman, Professor S Rado (Hungary), spoke at some length and introduced the first two sheets of a new world map at 1:2,500,000 which is now being produced in Eastern Europe. Details about the new map series had been given in a paper by Dr E Haack (DDR) but this had been submitted too late to be included in the Section IX programme.

Shortly before participants had heard Professor Arthur Robinson criticise the IMW project and argue that a smaller scale map, say 1:2M, was what was really needed, thus unintentionally giving Rado an opening (something that gentleman never missed!).

I also have a brochure for the series which shows the allocation of sheets to the various contributors. It bears no place or date of publication but contains the unusual note, ‘Selling price per sheet US$ 0.85 - 2.80 according to content’.

As the British sheet was produced in East Germany it is not surprising that minor differences in names occur when compared with the Soviet 1:1M series. Incidentally, the DDR had also produced its own secret 1:1M series. I have copies of the Paris (with Kent), Baghdad and Tehran sheets. They also overprinted sheets of the Russian series with Romanised names in red, as they did on some larger scale maps as well.¹

Ian O’Brien

Right way up?

Forgive me seeming to take map study with a degree of levity, but I cannot let pass without comment the cartoon reproduced on page 42 of the April 2007 issue of Sheetlines.

Unfortunately these days my ageing eyesight does not permit easy navigating of my ‘chauffeur’ using an Ordnance Survey map while bouncing along in a car, but thirty or forty years ago a regular Sunday activity of a friend and myself – he owned the Mini and I owned the maps – was to disappear into the Wessex countryside seeking abandoned canals and railways. When we were travelling in a southerly direction I would often be found to have the map upside down so that, although east and west were transposed, things on the left-hand side of the minor road I was following on the map were also on the left-hand side of the road he was driving along and I didn’t suddenly say “Turn left” when I meant right!

The habit hasn’t entirely died out even today; should I travel over an unfamiliar railway line and have an OS map to assist my window-gazing, I am likely to use it upside down if it better suits my personal left and right. This strange practice also resulted, until my sight began to diminish, in my being able to read upside down fairly easily, useful when the chap in the opposite seat had folded over his Telegraph or Guardian!

But then, with due regard to Deborah Ross, I am a mere man and perhaps have already entered the realm of insanity!

Tony Jervis

¹ see also John Cruickshank’s article on pp 23-43 – CJH.
In defence of GPS and SatNav

I am not usually one for writing articles, especially when they will be read by such a knowledgeable group as the members of the Charles Close Society, but I feel that I must respond to David Archer’s tirade against satellite navigation and GPS equipment.¹

I, like David, am passionate about maps and their uses. Having spent over forty years surveying for Ordnance Survey, latterly on providing the some of the data for datasets contributing to satellite navigation systems, I could hardly be otherwise. However, I feel that David has missed the essential advantages of SatNav and GPS over printed maps.

Maps are ideal for studying the mapped features of an area, particularly over a large area where the size limitations of a computer screen, be it SatNav or PC, constrain the view to a very small area. There is a wealth of information on any printed map which is conveniently to hand in the home, office, car, or on foot in remote areas. For planning a route the printed map cannot be beaten.

However, when it comes to the use of a printed map for vehicle navigation there are drawbacks.

• At some point you have to cross the folds on the map, and often refold it. Not always easy or convenient in the confines of a car!
• Attempting to drive and read the map is certainly not recommended on safety grounds.
• If you are lucky enough to have someone to navigate you are dependant upon their map reading skills.
• If you take a wrong turning without realising that you have done so, it could be some time before you realise that you are lost, and you then have to find out where you actually are, before you can work out a route to get you back on track.

With the use of SatNav you have the following advantages:

• You can enter your destination from postcode, address or geographical reference instead of having to wade through pages of an A-Z or gazetteer.
• You can preprogram the SatNav with the key points you wish to visit on route and it will take you to them in order and tell you when you reach each one.
• You do not have to look at anything whilst driving (contrary to what David implies in his article). You listen to the spoken instructions and follow them. If you do need the reassurance of looking at the map on the SatNav screen you can take a quick glance when it is safe to do so.
• If you do take a wrong turning (mistake or unexpected diversion due to roadworks or traffic accident etc.), the SatNav immediately informs you of the ‘error’ and works out a new route without any intervention by the driver or navigator. David’s suggestion of a small tape recorder with recorded directions could not cope with this situation.
• Most SatNav have preprogrammed positions for such things as Filling Stations, Banks, Hotels, etc., etc., so that you can find the nearest when the need arises. Not many maps can compete with this in-built database.

You can see from the above comments that I am a fan of both maps and SatNav. They are different presentations of geographical data and as such are both suitable for different

¹ ‘Kerry Musings’, Sheetlines 78, 63.
uses. I too always like to have a map with me, but the sensible use of a SatNav for unfamiliar journeys provides a pain free system of navigation in unfamiliar areas.

I likewise have some unease with David’s stand against GPS. When I am out walking in anything other than urban or cultivated rural areas I always carry a hand held GPS. I cannot remember ever having to use it, but my experience over thirty years ago with the North York Moors Rescue Team has taught me that walkers often get into trouble by getting lost in poor visibility. By the time that they realise that they are lost they often have no idea where they are. They head off on a compass bearing because, “If I head north I’m bound to come across that road”. They do not realise that there is now a cliff on their northward track. When they come to the cliff they get even more confused! The use of a GPS coupled with their map will, within a few minutes establish the lost walker’s position. A little data inputting will then provide a series of waypoints between which there is safe walking, and the GPS will take them from one to the next and eventually to safety.

I do admire David’s vision in proposing a wrist GPS kit which can transmit the lost walker’s position to the search team. If he puts in the work to design and build a prototype I would be delighted to test it and suggest improvements.

No, I am not anti maps: I am passionate about them, but there are occasions when SatNav and GPS have their uses.

One last point however. How many stories have we all heard about drivers using SatNav and being directed the wrong way down one-way streets, across moorland tracks, up dead ends? Please, if you do use a SatNav remember that a little common sense in its use is still necessary. Don’t switch your brain off or you will end up trying to drive across a narrow footbridge near Market Harborough, (SP755907 for anyone interested). It’s shown correctly on OS large and small scale mapping, but my Garmin SatNav and an OS TomTom both tried to get me to drive over it!

David Andrews

It all depends on your needs. A basic GPS was very useful when for several years we had to identify which TV transmitters the great British public were using.

On twisting roads and housing estates matching the GPS indication to pre-programmed transmitters saved much confusion except where directions were similar. Then a knowledge of aerial groups was usually the solution.

Nigel Brown

Apologies that space does not allow us to print more of the letters received on this subject. – CJH.

**M40 Junction 4 / A404 Handy Cross Improvement Scheme**

Major road works at the above junction commenced on 26 October 2005 with a projected completion date of 29 January 2007. However due to a number of factors the Highways Agency finally completed the project on 30 May 2007. On the Reading & Windsor Landranger sheet 175, edition C2, published on 17 April 2006, the totally revised junction layout was already shown. I am sure that other road projects been depicted ahead of completion but is thirteen months a record?

Mike Cottrell
**OS mapping of SW Scotland circa 1820**

I read with interest Richard Oliver’s article in *Sheetlines* 78 on ‘Unfinished business: the lost Ordnance Survey two-inch mapping of Scotland, 1819-1828 and 1852’. He mentions that there was lobbying of Wellington by friends in Scotland, but that the Wellington papers do not provide evidence of this.

Recently I was investigating correspondence between William Faden and the Commissioners of Supply for Kirkcudbright relating to a third edition of John Ainslie’s map of Kirkcudbrightshire and, while scanning through several years of the minutes of the Commissioners,¹ I noticed a reference to the cessation of the Ordnance Survey in Scotland.

As the Kirkcudbrightshire Commissioners had been planning a subscription to the revised county map for several years (since at least 1816), they would probably not have been interested in a further subscription for an Ordnance Survey map.²

Commissioners of Supply were committees of local landowners, the precursors of county councils in Scotland, who dealt with matters of common interest within a county, such as building roads and bridges, keeping the peace, and collecting and spending local taxes. The records of the meeting of 29 April 1820 indicate that the Kirkcudbrightshire Commissioners had received a communication from the Perthshire Commissioners alerting them to the proposed withdrawal of OS surveyors, and suggesting that the different Commissioners of Supply should lobby Wellington about the pressing need to survey Scotland. Unfortunately I did not transcribe the whole entry, as my interest lay elsewhere, but I did note the following extract:

> Mineral and geological survey of Galloway.

> … subscribed to the meeting a communication from Doctor MacCulloch dated at Dunkeld the 13th day of October last, and a copy excerpt of the minutes of a general meeting of the County of Perth held on the fifth day of that month, from which it appears that the Mineral Survey, which has for some time been carried on by Doctor MacCulloch in conjunction with the Trigonometrical Survey under the direction of Colonel Mudge, has now attained to such a state as nearly to include the half of Scotland; that the completion of these surveys will be conducive not only to the general improvement of the Landed Property but also to the Commerce of the Kingdom.

> That a Geographical Survey for the purpose of a general map has been commenced by the order of Government under the supervision of Colonel Mudge and that the addition of the Mineral Survey will include every thing that can be desired on such a subject; as a knowledge of the subterranean nature of every district and property will thereby be combined with an accurate determination of their forms and boundaries. And that the General Meeting of Perthshire requested the Duke of Atholl, the Lord Lieutenant of the County to correspond with the Duke of Wellington, Master General of the Ordnance on the subject and to urge the continuation of these surveys …

It may be worth pursuing this with the Atholl Estates Archives at Blair Castle, or Perth and Kinross Archives for the records of the Perthshire Commissioners of Supply. It is interesting that the emphasis is on the geological survey, perhaps appealing to the landowners’ desire to exploit minerals under their land, but also indicating MacCulloch’s efforts to generate support for his geological survey work.

A further contemporary reference is in the introduction to John Thomson’s *Atlas of Scotland* (1832) where he lists his sources. Under Ayrshire (on page iv) he writes:

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¹ Held in the Ewart Library in Dumfries ref. K1/1/8 1819-1827.
In 1823 and 1824, several attempts were made to get the Government survey completed of Ayrshire, and at one time circumstances promised the completion of this undertaking; but the demand for surveyors to complete the trigonometrical survey of Ireland, which country had attracted the public attention more than any other portion of the kingdom, left the survey of Ayrshire in abeyance.3

Richard Oliver remarks:

Diana Webster’s comments and additions are extremely interesting. It is unclear why the Perthshire Commissioners should be worried about the withdrawal of Ordnance surveyors in 1820, unless this was something to do with the primary triangulation, which was running far in advance of the detailed topographical survey. The reference to an unsuccessful attempt to get the Ayrshire survey completed in 1823–4 is of interest in that it seems that already by 1832 the ‘myth’ was in circulation that the topographical survey of Scotland had been stopped in favour of that of Ireland. It is much more likely that by 1824 the problems of the defective pre-1820 surveys in England and Wales were fully apparent, and there was no point in pressing ahead vigorously in Scotland when there was such a backlog of material awaiting revision and engraving south of the border.

On pages 27 and 28 of my article I discussed briefly whether more work was surveyed on the ground than was eventually drawn on paper. I have since rediscovered some notes on Thomas Colby’s report on the state of survey in Great Britain in January 1834, which gives the following expenditure on the survey of Scotland:4

<table>
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</tr>
<tr>
<td>1820</td>
<td>£735/16/0</td>
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<td>£456/14/3½</td>
</tr>
<tr>
<td>1827</td>
<td>£299/15/9½</td>
</tr>
<tr>
<td>1828</td>
<td>£113/3/8</td>
</tr>
<tr>
<td>Total</td>
<td>£5,140/17/7</td>
</tr>
</tbody>
</table>

This indicates a peak in 1822, by which time about 650 square miles had been surveyed and drawn, i.e. nearly 70 per cent of the 937 square miles reported as mapped by Colby in 1843. However, by the end of 1822 only £2942/4/8, or about 57 per cent of the total, had been spent. The 1834 report also says that 946.25 square miles had been surveyed. This suggests: (a) that there may have been about ten square miles surveyed but not drawn; (b) that the cost per square mile surveyed was rising from 1822 onwards; and (c) that there may have been some unreported activity, possibly in the form of secondary triangulation.

Towards the end of my article I suggested that unpublished one-inch mapping of the Isle of Wight of the 1850s might have been a by-product of the two-inch surveying episode in southern Scotland that year. Once again, I had overlooked what I had long known, that revision of the Isle of Wight was authorised by the Board of Ordnance on 1 September 1852, at a cost of £200. This followed an application by Sir Henry De la Beche, the Director of the Geological Survey.5 Whilst the suggestion that the Isle of Wight work was in part a training exercise for Scottish two-inch survey therefore seems unlikely, it is still possible that the unpublished mapping represents a style which would have been adopted had the Scottish two-inch work reached publication.6

3 See http://www.nls.uk/maps/early/870.html for a scanned image of page iv of the atlas.
4 Colby’s ‘Precis’, in The National Archives (Public Record Office) [TNA (PRO)], WO 44/614, Return no. 10. It is noted there that the Clerk of the Ordnance’s books made the total only £5,095/15/1, but the difference does not affect the general argument.
5 TNA (PRO), WO 47/2304, pp 8648-50.
6 The most accessible copy at present is that in TNA (PRO) MR 1/1311.
**Foulshiels – birthplace of Mungo Park**

Recently, whilst planning a route for the work-based walking club I run, I came across what I thought was a unique annotation on OS *Landranger* 73, adjacent to Foulshiels Farm, in the Yarrow Valley west of Selkirk, in the Scottish Borders.

The text runs ‘Birthplace of Mungo Park’. I checked the same spot on the relevant *Explorer* sheet and found it there also, although on the *Explorer*, Foulshiels Farm does not seem to be named separately – the two names appear to run together, as ‘Foulshiels Birthplace of Mungo Park’.

As mentioned earlier, I thought this must be unique. But I thought I had better check through my *Landrangers*. Having done this and found no other example, I then used the various Internet map websites, searching on ‘birthplace of’ and www.streetmap.co.uk came up with ‘Birthplace of General Roy – South Lanarkshire’. This time the *Landranger* text had an additional ‘Site of’ tag and appeared to be labelling a trig point! I also checked historical mapping online at www.old-maps.co.uk and discovered ‘Birthplace of Mungo Park’ was also marked on the one-inch map dated 1863. Foulshiels was then spelt Fowlshieals. The most comprehensive list, however, came from the OS website gazetteer and has a preponderance of Scotsmen:

1. Birthplace of Shakespeare (Point of interest)
2. Birthplace of General Roy, South Lanarkshire (Other feature)
3. Birthplace of Mungo Park, Scottish Borders (Other feature)
4. Hayes Barton (Birthplace of Sir Walter Raleigh) (Point of interest)
5. Monument on Site of Birthplace of James Hogg the Ettrick Shepherd (Point of interest)
6. Woolsthorp Manor (Birthplace of Sir Issac Newton) Woolsthorp by Colsterworth, Grantham (Point of interest)
7. Monument (Birthplace of Flora MacDonald) (Point of interest)
8. Manor Ho (Birthplace of Newton) Lincolnshire (Antiquity (non-Roman))
9. Monument on Birthplace of James Hogg, Scottish Borders (Other feature)

I had heard of Mungo Park and knew he was an explorer but that was about it, so after a bit of surfing I came up with a potted history: Born 10 September 1771 at Foulshiels, near Selkirk, Mungo Park trained and gained formal qualifications as a surgeon and it was in this career he worked when he was not exploring in West Africa. He had two expeditions to explore the River Niger – 1795/1797 and 1805/1806 – and between these expeditions he found time to marry and set up practice in Peebles. His 1805 expedition came to a premature end when all but one were drowned whilst being attacked by native tribesmen at the Bussa Rapids near Yauri in present day Nigeria.

Well, I knew who General Roy was and understood why his birthplace was marked on Ordnance Survey mapping, but what about Mungo Park and the others? Why were they deemed important enough to honour in this way? Is there a link between Mungo Park and OS? Who decided on which great men and women should be included? Why the preponderance of Scotsmen?

*Paul Swindell*
**New maps**

*Jon Risby*

This list covers small scale maps published between 7 March and 6 July 2007. They are listed by series, and in sheet number order. The columns are as follows: Sheet No. / Title / Edition / Copyright date / Full revision date / Latest revision date / Date of publication. There is also a list of those maps due for publication by OS (by series and in order of their proposed publication).

After the list of OS maps is a résumé of maps published by Alan Godfrey between March and June 2007.

### OSGB maps

Revision notes are referenced in column six as follows:

1. ‘Reprinted with minor change’
2. ‘Revised for selected change’
3. ‘Revised with selected change’
4. ‘Revised for significant change’
5. ‘Revised with significant change’
6. ‘Major roads revised’

Where details are shown in *italics* I have not been able to confirm the details by seeing the map itself, and therefore information is based on Ordnance Survey’s list of new publications. I hope that I shall be able to confirm information in the next edition of *Sheetlines*.

#### Landranger – new editions

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193 Taunton, Lyme Regis, Chard & Bridport D 2007 2003 2007\(^1\) 19/04/07
194 Dorchester, Weymouth, Cerne Abbas & Bere Regis C2 2007 1998 2006\(^1\) 19/02/07

**Explorer – new editions**

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The English and Welsh maps listed above show Access Land and are in new style Explorer covers. The Scottish maps do not show Access Land, but are in the new style Explorer covers. Every Explorer and Outdoor Leisure Explorer sheet is now also available in the Explorer Active format. Editions are the same as the relevant standard Explorer.

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55 Kildare, Laois, Offaly, Wicklow

Cassini Historical Maps (formerly Timeline Maps)

Cassini Old Series now covers the whole of England and Wales. The series is based on OS one inch Old Series maps, published between 1805 and 1874. The originals have been combined, re-scaled and re-projected exactly to match modern-day Landrangers. They also have the same sheet number and are overlaid with the National Grid. An example was reviewed in Sheetlines 74, 45.

Cassini Past and Present Series present an area in four maps on one sheet. Each map is from a different era: mid and late nineteenth century, the 1920s and the present day. Each map is adjusted to a scale of 1:50,000. No new areas have been added since the list given in Sheetlines 78.

Cassini Popular Series is a new addition to the range. These maps are taken from Popular Edition maps first published between 1919 and 1926. As with the Old Series they have all been scanned, digitally re-projected, enlarged and gridded to match the present-day Landranger series and use the same sheet number. All of the maps in the series should now be available.

More details from http://www.cassinimaps.co.uk, where the maps can also be purchased.
## Alan Godfrey Maps

Details of Alan Godfrey’s reprints of old OS maps are available from Alan Godfrey Maps, Prospect Business Park, Leadgate, Consett, DH8 7PW, tel. 01207 583388, fax 01207 583399, or from their website at [http://www.alangodfreymaps.co.uk/](http://www.alangodfreymaps.co.uk/). Maps may be ordered directly from the website.

The columns are as follows: County / Sheet number / Title / Date of map / Month of issue.

<table>
<thead>
<tr>
<th>County</th>
<th>Sheet number</th>
<th>Title</th>
<th>Date of map</th>
<th>Month of issue</th>
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<td>Hayle &amp; Lelant</td>
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### England and Wales one-inch

The italicised place name in brackets after the title is covered on a large scale map on the reverse.

1/2 Norham & Berwick *(Norham)* 1864 03/07
6/22 Maryport & Silloth *(Fothergill and Risehow)* 1903 06/07
29 Keswick & the Northern Lake District *(Buttermere Village)* 1903 06/07
41 Swaledale *(Catterick Bridge and part of Brompton-on-Swale)* 1904 04/07
63 Vale of York (North) *(Stamford Bridge)* 1913 03/07
145 King’s Lynn & District *(Castle Rising)* 1907 05/07
147 Aylsham, Reepham & District *(Attlebridge)* 1908 06/07
Whoops!

People read what they expect to see, but how many staff must have read the cover of this 1948 map before it was published? If you have not spotted a problem, look again at the publisher’s name, top and bottom of the picture.

Finding this map on eBay made me feel better about issuing Sheetlines 78 with ‘April 2006’ printed boldly on the front cover. Roger Hellyer saves me from most errors by nobly reading the proofs of each issue, but the cover is totally my responsibility: only I see it before we go to press! – CJH