“Kaiser Bill thought he knew where you lived”

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The Society publishes a wide range of books and booklets on historic OS map series and its journal, Sheetlines, is recognised internationally for its specialist articles on Ordnance Survey-related topics.
Military mapping of opposing territories has a very long history. Both the Second World War German, and the subsequent Soviet, mapping of Britain have recently been discussed in *Sheetlines*, but there had been earlier efforts by foreign powers to map these islands. Before and during the First World War Britain and Ireland were mapped by the military survey organisations of what were then the ‘Central Powers’: Germany and Austria-Hungary. For obvious reasons this mapping was derived from familiar Ordnance Survey mapping; for equally obvious reasons it was not well publicised at the time. It has remained little known ever since.

I

By 1914 the Austrian General Staff had a long history of mapping not only its own territory but also areas outside it. From its foundation in 1758 onwards the peacetime duties of Austrian General Staff officers were principally surveying and mapping. The *Josephinische Aufnahme* of the late eighteenth century was a systematic series of manuscript maps of the individual territories forming the empire. The mapping included extensive mapping of non-Austrian territory in southern Germany and the Rhineland, because these areas were the link between the Tyrol, several scattered possessions in southern Germany, and what were then the Austrian Netherlands. As in most European countries, the growth of Austrian military mapping was stimulated by the events and experience of the Revolutionary and Napoleonic wars. More modern mapping was developed and the absolute secrecy of the eighteenth century manuscript mapping was recognised to have hampered operations that should have been assisted. Progressively more and more maps were printed, and progressively more and more of the smaller scale maps were made available for sale. Furthermore Austria’s essentially land-locked position led it systematically to compile mapping of all surrounding territories and strategically important areas. In effect, by the late nineteenth century this meant that Austria had mapped almost the whole of Europe. The 1913 public catalogue details much (but not all) of this mapping. Austria-Hungary was however a continental power with few maritime or colonial pretensions. Britain was thus excluded from most Austrian maps, which stopped at the Channel. One series had included some sheets of England. This was the 1:300,000 *Generalkarte von Zentraleuropa* (fig. 1), which during the nineteenth century had been one of Austria’s flagship publications. Maintenance of the sheets

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4 *Preisverzeichnis der Kartenwerke und sonstigen Erzeugnisse der k. u. k. Militärgeographischen Institutes in Wien*, Vienna; Verlag des k. u. k. Militärgeographischen Institutes, 1913. This includes sheet diagrams of all the series then publicly available.
however stopped in the 1880s and by 1914 this series was obsolete. The replacement 1:200,000 series did not even cover France, far less Britain.

The German empire was only created in 1871 when, following the Franco-Prussian war, the south German kingdoms and principalities joined with Prussia. The Prussian King became Emperor (*Kaiser*), and many Prussian government bodies acquired imperial functions. As in Austria, the Prussian General Staff had regarded surveying and mapping as central to its role and as its foremost peacetime activity and form of training. It was however small, and most of its effort was focussed on its own territories, which had been much expanded at the Congress of Vienna. Nevertheless Helmuth von Moltke (the elder), who was to be Chief of the General Staff (and thus commander) of the victorious Prussian armies in 1866 and 1870, had himself surveyed and mapped both Constantinople and Rome and had produced a map in eight sheets of Ottoman Asia Minor based on route surveys. After 1871 the Prussian General Staff was transformed into the Great General Staff, still under Moltke, and gained an imperial role in addition to its continuing Prussian functions. Within it the

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5 Hans H F Meyer, ‘Die Bedeutung der Karte’, *Mitteilung des Reichsamts für Landesaufnahme* 13 (1937), 368-390, esp. 373-4. In 1839 von Moltke was decorated with the ‘Pour le Mérite’ for his Turkish surveys.
Übersichtsblatt
zur topographischen Specialkarte von
MITTEL-EUROPA
im Maßstabe 1:200.000,


Erläuterungen:
1. Die senkrechten und waagrechten Linien geben die Blatteinteilung
der Karte, die Nummern und Namen bezeichnen die einzelnen Blätter.
2. Die herausgegebenen Blätter sind in der Diagonale durchstrichen.
3. Die durch einen Pfeil verbundenen Blätter sind in einem durch die
Pfeilspitze bezeichneten Blatt vereinigt.
4. Den Beszug der Karten vermitteln die Karten-Vertriebsstellen und deren
Mittelspersonen. Preisverzeichnisse, Bezugsbedingungen und Übersichten
sind selbst kostenlos erhältlich.

Figure 2: Extract from Index diagram to Prussian 1:200,000 Topographischen Specialkarte von Mittel-Europa series (formerly the Reymann map)
Figure 3: Extract from sheet Calais, 1:300,000 Übersichtskarte von Mitteleuropa
Königliche Preußische Landesaufnahme (Royal Prussian Land Survey) was reorganised and enlarged. It assumed not only a leading and coordinating role for survey and mapping within the empire, but also emulated the Austrian General Staff in developing mapping extending far beyond its boundaries. Although much of this was developed in secrecy, some was publicly revealed.

The map used by Prussia to fight the Franco-Prussian war had been the 1:200,000 Topographische Spezialkarte von Mittel-Europa. Although G D Reymann who originally prepared this map at the beginning of the nineteenth century had been a Prussian engineer officer and official, the map had been his personal property, and by 1870 it had long been owned, published, extended and revised by a private company, C Flemming of Glogau in Silesia. In 1874, as a first step in developing a wider mapping role, the Prussian General Staff bought the entire map, which in its final form extended in 796 sheets from the Loire to the Bug and from the Gulf of Riga to the Drava. Because of its history, the map had a high reputation in Germany, but it was old and already obsolescent when the General Staff bought it. It remained on public sale even after the First World War, but from the 1890s onwards efforts were made to replace it with more up-to-date mapping, and by 1914 it was supposed to have been superseded for military use.

The final sheet numbering scheme provided numbers for sheets covering southern England, but these sheets seem never to have been prepared (see fig. 2).

After a complex period of experimentation, what emerged as the work-horse German medium-scale military map was the 1:300,000 Übersichtskarte von Mitteleuropa. This had begun in the early 1890s as a map of the German-Russian border regions. Sheets were first made public in 1906. Although many of the sheets of Belgium and northern France were not publicly advertised before the First World War, the stones had been prepared in 1912-13 and the sheets were included in the twenty-four-sheet mobilisation sets.

A small triangle of England appeared on one of these sheets, that of Calais (fig. 3). It is striking that this new mapping provided a profoundly out-dated image of the small part of Sussex and Kent covered. Although the outline seems closely related to that of the contemporary OS second edition quarter inch map (1909/1912), the OS map shows Hastings, St Leonards and Bexhill all to have spread to much larger areas, with intermediate settlement also denser. It also shows Lydd (military) Camp and its associated batteries, which do not appear on the German map. The name ‘Dungeness’ appears on the German map in its older form ‘Denge Ness’, which it does on the 1903 quarter inch OS map, but the 1903 map still shows the urban spread and the railway branch to Rye harbour which are missing from the German map. The source of the German map seems therefore to have been the Old Series quarter inch map that itself was based on the original early nineteenth century Ordnance

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7 The individual sheets of northern France were last revised in 1874-9. By the First World War most had not been converted to the final numbering system or had even been given the Königliche Preussische Landesaufnahme imprint. Nonetheless in 1914 the Planabteilung Metz reprinted a series of combined sheets of this map covering the area. The Reymann map also eventually provided the outline base for many of the maps in the German official history of the war.

Survey. In Britain this had been condemned as embarrassingly out-of-date as soon as it had been published in 1891. It was never used for military purposes. Twenty years later the German General Staff thus made a very poor choice of source material for their new map.

II

Despite intense preparation in Berlin for an offensive war of short duration, there had been none for any longer conflict, and there had been no preparation of support services in Berlin or elsewhere to sustain prolonged warfare. Indeed there had been little appreciation that they might be necessary. In 1914 the entire German military leadership, from the Kaiser down, left Berlin to establish headquarters in the field. All General Staff officers who were fit for active service thus left Berlin. The Trigonometrical and Topographical departments of the Landesaufnahme were closed down. Only the technicians and craftsmen of the Cartographical Department (Kartographische Abteilung) remained in Berlin to provide a map printing service within what was termed the ‘Deputy General Staff’ (Stellvertretender Generalstab). Although it notionally took instructions from the Chief of Staff of the Field Army, there was a substantial tradition of operational secrecy that made staff officers feel it improper to communicate even with fellow staff officers in the field, quite apart from those not in the field.

Activity at the Kartographische Abteilung was however maintained. Since 1907 the head of the department had been Oberstleutnant (lieutenant-colonel) Max von Zglinicki (promoted Oberst in 1909 and Generalmajor in 1913). He had joined the department in 1890 and had been there ever since. He clearly had strong views on the need for his service in wartime, and on what its role should be. On mobilisation he was unfit for active service, but remained head of his department in Berlin until the end of June 1915. He died in Weimar just over three months after that.

Under von Zglinicki the Kartographische Abteilung produced and printed a flood of new maps during the later part of 1914 and during 1915. Many of the enlargements of small-scale maps that provided the earliest large-scale maps needed for position warfare were prepared in Berlin, but clearly this work was hampered by poor communication between Berlin and the fronts; the creation and development of Vermessungsabteilungen in the field reflected this. The department however produced an enormous number of new small and medium-scale maps, especially during 1915. Amongst these were many new 1:300,000 sheets (to several different provisional specifications) that extended the Übersichtskarte von Mitteleuropa in all

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10 The German map was not derived from the Austrian 1:300,000 sheet of Calais (1876) which gives a quite different image, particularly of Romney Marsh. The Austrian map does however show the railway line to Rye harbour, though not that to Lydd, Dungeness and New Romney.
11 See General P L E H A Bronsart von Schellendorff, The duties of the General Staff, (translation by W A H Hare of Der Dienst des Generalstabes, third edition, revised by K W J Meckel), HMSO, 1895, 277. Bronsart von Schellendorff’s book was the instruction manual for German staff officers. The author had been one of Moltke’s three section chiefs during the Franco-Prussian War, and was Prussian Minister for War 1883-89. His book was subsequently revised and updated by serving General Staff officers (including in 1905 his son). Within over 300 pages of detailed prescription of the duties of the General Staff in war, he covers the duties of the Deputy General Staff in one entirely vague sentence. The sentence remained unchanged in the fourth edition (HMSO, 1905, 287).
directions. Eighty sheets of a completely new 1:800,000 map of Europe and the Near East, the ‘Operationskarte’, were produced. The 1:100,000 Karte des westlichen Russlands was extended eastwards and northwards beyond Congress Poland and Lithuania. All sorts of miscellaneous maps were produced, including various reproductions of British and Indian maps of Persia (which was to lose its independence to Britain during the war), plus copies of other middle-eastern maps. How useful some of these maps were can be questioned. Many, particularly those at 1:300,000 and 1:800,000, duplicated coverage that had already been prepared by Germany’s ally Austria. Furthermore German troops, with relatively few exceptions, did not advance beyond the pre-war extent of the Übersichtskarte von Mitteleuropa. One gains the impression that the Kartographische Abteilung spent the first two years of the war producing maps largely to its own agenda, when it might have been better occupied, as its counterpart in Vienna was, in providing troops in the front lines with the maps they wanted.

Be that as it may, during 1914 and 1915 mapping of Britain and Ireland was prepared at both 1:300,000 and at 1:800,000. The 1:300,000 sheets followed the rigid graticule scheme of the Übersichtskarte von Mitteleuropa. This meant that as many as forty-four 1:300,000 sheets were required to cover the British Isles, many of these showing a large area of sea with a little land in a corner. Except for the pre-war Calais sheet, these sheets did not conform to the standard specification of the German series. They were direct reductions of Ordnance Survey quarter inch outline mapping. As with the Calais sheet, the base mapping reproduced was old, but there was some updating and additional material. On the Dover sheet (dated 1914) the towns are smaller than on sheet 20 & 24 of the 1903 coloured OS map (fig. 4). The Sheppey Light Railway does not appear, while it does on the 1903 map. On the other hand the railway line from Headcorn to Tenterden does appear on the German map although it was not added to the OS map until the second edition of 1909. Major roads are given a red infill. These generally correspond to the roads shown in colour on the OS 1903 and 1909/12 maps, although colour was omitted from the Deal to Sandwich road and many fewer roads within towns were coloured. Woods were given an olive green fill. The OS graticule lines were reproduced without change, but longitude values from Ferro are given at the sheet corners. Some of the fine line work of the OS original did not reproduce well after copying, reduction to 1:300,000 and transfer to stone. The water lining in particular became very broken around the North and South Foreland. Minor place names became very small and I can only read them with a magnifying glass. Inland water features are emphasised with blue on top of the already heavy OS black. The effect of this double printing is to create a slightly blurred image and, particularly in estuaries, to obscure detail. Added to the map from some other source are a substantial number of forts and batteries between Gravesend, Shoeburyness, Sheerness and Chatham, plus a lesser number at Dover and one at Hythe. These are shown by bright green symbols with surrounding areas shown screened with the same green.

16. German troops were increasingly used to stiffen Austro-Hungarian armies in south-east Europe, but the mapping they used there was Austrian in origin, even when modified by German units in the field. German units participated in Ottoman campaigns at Gallipoli and in Palestine, but Berlin produced no useful tactical mapping of these theatres. Although the one-inch maps of the Palestine Exploration Fund were known in Berlin, they were distrusted, and the Vermessungsabteilung sent to Palestine was unaware of their existence until a set was captured in Haifa. Modern mapping was not prepared of the Ukraine, which was eventually occupied by German units in the Spring of 1918.

17. The convention had been adopted before the war of showing fortified areas with coloured shaded overprints: blue for German, green for those of allied or neutral powers, and red for hostile powers. The choice of colour used for this sheet is thus curious.
Figure 4: Extract from sheet Dover, 1:300,000 Übersichtskarte von Mitteleuropa
completely missing from the map is any indication of relief; neither hill shading nor contours appear, nor are there any spot heights. The Boston sheet (also dated 1914 and covering Derby, Warwick and Cambridge as well as Boston) has a very similar specification; spot heights do however appear (in feet) on the base map but no fortifications are shown.

![Figure 5: Extract from sheet Dublin, 1:300,000 Übersichtskarte von Mitteleuropa](image)

The Dublin sheet (1915) also reproduces an Ordnance Survey outline map, the quarter inch edition of 1903-04. As on the original, there is no water lining (fig. 5). The overprinting of the water features in blue is more subtly done than on the English sheets. Although there are no contours or hill shading, the OS outline carried many individual spot heights which thus appear (in feet) on the German map and provide some indication of relief. No fortifications appear on the sheet. The road colouring seems to match that of the OS coloured map.

At 1:800,000 Britain and Ireland were covered by seven sheets without overlaps (fig. 6). The London sheet is dated 1914; the others are from 1915. Five of these followed the rigid graticule scheme of the series, giving as a result rather unusual combinations of places. The ‘Dublin’ sheet included about a quarter of Ireland, together with western Wales and Cornwall.

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18 The edition used is made clear by the reproduction of the OS longitude rulings at 20° intervals.
19 Although I think it probable that coverage of Britain and Ireland was completed, and index diagrams to the entire series appear on the subsequent 1:800,000 sheets, I have been unable to identify any library sets of these maps to confirm this. I would therefore be glad to hear of the locations of any further sheets.
20 The 1:800,000 Calais sheet is dated 1916 and seems to have been prepared at the same time as the sheets of France.
Kent and East Anglia appeared on the ‘Calais’ sheet with much of northern France, Belgium and part of the Netherlands. Two sheets did break from the rigid scheme, including ‘Cork’ which covered the western half of Ireland, and ‘Kirkwall’ covering Lewis, Caithness, the Orkneys, Shetland and all those little northern skerries that are usually shown out of position, if at all. Military and naval sites were unevenly identified, and the symbols used for a fortified area were different on different sheets. On the Calais sheet a large irregular shape surrounding Chatham, Gravesend, Southend and Sheerness was marked as a fortified area using red shading within a red line. Smaller, but still large, fortified areas were indicated at Hythe, Dover, Deal, Ramsgate with the North Foreland, Harwich, Ipswich and Great Yarmouth. Similar red areas of various sizes are marked on the London sheet, including not only port defences but also a line of ten fortifications between Guildford and Sevenoaks. On the Dublin sheet similar irregular areas at Plymouth, Falmouth, and Milford Haven were marked with a green line and green shading. On the Cork sheet three separate batteries in Cork Harbour and two on Bear Island were marked with little green ovals without shading. On the Glasgow sheet seven separate small green circles mark the defences of Lough Swilly, while five more mark defences of the Clyde. Little green circles mark coastal defences between Scarborough and Aberdeen (including Inverkeithing), but there was no indication of naval activity or defences at Rosyth or Scapa Flow. Navigable rivers and canals were differentiated from non-navigable ones, but although many very minor rivers and the Royal Military Canal were marked as navigable, the Caledonian Canal was not. Railways were
prominently shown, but in several places their representation was faulty; for example the line from Runcorn to Liverpool was omitted in favour of a mythical line from Runcorn to St Helens, while part of the West Coast mainline north of Warrington was also missed out. Clearly, Bradshaw had not been consulted.

It seems likely that if these maps had been used for ground based military action they would have been found seriously wanting. The problem of inconvenient standard sheet lines would probably have been solved by printing larger combined sheets; this had been standard German military practice for many years and continued throughout the war.\footnote{21} The out-of-date source material might have proved a greater problem, particularly since British forces would have been using more recently revised mapping. The absence of any graphical representation of relief on the 1:300,000 maps would substantially have limited their value. The faulty representation of railways on the 1:800,000 maps (which were used by the railways section of the Great General Staff) would have caused serious confusion.

It is however more likely that these maps were expected to be used in action above the ground, where their faults might have been less obvious. During the First World War Zeppelin airships were used to mount air raids on Britain. Such airships had the space to carry a chart table and substantial stocks of maps. Within Germany their navigators generally used the contoured 1:200,000 General Staff map, which was also prepared in a special Fliegerkarte edition. Outside Germany they used standard nautical charts plus whatever mapping was available in the range between 1:200,000 and 1:500,000.\footnote{22} It is thus quite probable that the trigger for the production of German maps of Britain and Ireland was the Zeppelin bombing campaign that began in January 1915.

III

After the end of the First World War the 1:800,000 maps were reissued in a civilian form, but sales were pitiful and after a few years the series was abandoned. The German 1:300,000 maps of Britain were quietly forgotten about. They did not appear on post-war indexes to the series. The stones however remained in existence and in 1939, at the beginning of the Second World War, the Reichsamt für Landesaufnahme (the successor body to the Königliche Preußische Landesaufnahme) printed a new combined sheet of six series sheets of the Übersichtskarte von Mitteleuropa, titled ‘Zusammendruck 1:300 000 Dover – Laon’. This reproduced the First World War mapping of Kent and Essex with a number of cosmetic changes. The ‘Old Series’ image of Hastings and Rye was reproduced from the ‘Calais’ sheet unchanged. The content of the 1914 ‘Dover’ sheet was modified by the removal of the water lining, some reduction in the amount of blue overprinting in estuaries, and the omission of the fortifications overprint. There was still no relief representation, there were no submarine contours, and lightships continued to be identified in English, not German. The road network was not up-dated. All the French component sheets retained their original graticule ruling at intervals of 15’ of latitude and 30’ of longitude, and retained the superseded Ferro longitude values in the margin in larger figures than the (by then current) Greenwich ones. The graticule rulings on the Dover component sheet were re-engraved to match those of the others. The presence of the graticule meant however that there was no grid. The style of the

\footnote{21} The gaps at sheet junctions, arising from the nature of the Prussian polyhedral projection, were simply fudged during the process of transferring the small sheets to a larger stone.

marginalia seems to be that of the 1920s or earlier; in particular there was no magnetic deviation note. The sheet was almost certainly not intended for use in England; by 1939-40 the mapping was even more out-moded and out-of-date than it had been in 1914 and (despite the work involved in the cosmetic changes) the English section of the combined sheet must surely have been included simply to fill out the rectangle of a sheet printed for planning the invasion of Belgium and France.

The concept of such a portrait format combined sheet of six 1:300,000 sheets dated from the 1890s. Such sheets had provided the standard mapping of Poland and western Russia before and during the First World War. In Belgium and France, at the beginning of the First World War, a more modern arrangement of combined sheets had been developed that broke with the rigid framework of the individual sheets and provided substantial overlaps. The ‘new’ combined sheet was thus a reversion to the ideas of an older era of mapping. It provides a magnificent example of the out-dated and un-gridded mapping produced for the German forces at the very beginning of the Second World War. The sheet’s failings were rapidly appreciated; it was very shortly superseded by the individual series sheets of the Sonderausgabe 1. 3. 1940 of France, which carry print codes of February 1940. These have the standard specification and marginalia of the late 1930s, including a magnetic variation note, and instead of the graticule they carry the French Lambert grids. These were the maps actually used for the conquest of France that summer. I am not aware that the ‘Dover’ sheet was ever recast in this form.

IV

Both the influence of the German Great General Staff on the outbreak of the First World War, and the disastrous failure of its plans to achieve victory over France in the opening weeks of the war, have recently been the subject of renewed attention. This has followed the reunification of Germany west of the Oder, and the consequent opening of previously closed archives in the former GDR. It is now realised that more survived the bombing of the military archives of the Reich in 1944-5 than had previously been thought.

There was a widespread conviction in German government circles before the First World War that only through a pre-emptive war against the other European powers could Germany’s international standing be secured, and that such a war was also necessary to defuse domestic political tension. Underpinning these views was a belief that such a war would be short and could successfully be fought and won without excessive expense or domestic disruption. This in turn depended on an essentially blind confidence in the General Staff and its highly secret war plans. The Prussian General Staff was commonly

23 J L Cruickshank, ‘German Military Maps of UK & Ireland of World War II’, Sheetlines 69 (2004), 15-19. There are additional complexities to the carto-bibliography of German 1:300,000 mapping of France at around this time, including some sheets photographically derived in 1937 from the French 200,000 map.

24 The role of the Great General Staff in German government in the decade before the First World War is analysed in Anika Mombauer, Helmuth von Moltke and the origins of the First World War, Cambridge: CUP, 2001. The following paragraphs rely heavily on her work. Arden Bucholz, Moltke, Schlieffen and Prussian war planning, New York: Berg, 1991, analyses the Great General Staff over a much longer period, but as a result is sometimes frustratingly sketchy about detail.


26 There has been continuing controversy about German war planning. Terence Zuber, Inventing the Schlieffen Plan, Oxford: OUP, 2002, argues that the famous plan was in fact a post-war fiction; the same author’s German war planning 1891-1914: sources and interpretations, Woodbridge: Boydell & Brewer, 2004, catalogues the controversy
said to be one of the five perfect institutions in Europe. The defeat of the Battle of the Marne and the failure to capture Paris not only led to the subsequent loss of many hundreds of thousands of lives, it also shook confidence in the supposed perfection of the Great General Staff.

Immediately after the Battle of the Marne the then Chief of the General Staff, Helmuth von Moltke (the younger), was scapegoated and removed from field command. He died (of a stroke) in 1916. During the inter-war period former General Staff officers, who controlled the Reichsarchiv and its records and so monopolised German historical writing on the war, ensured that all blame was attributed to him. Their aim was to deflect any blame from themselves or from the General Staff as an institution. They had after all been appointed specifically to maintain a nucleus of the Great General Staff despite the formal ban on its continuation imposed by the Treaty of Versailles. It was absolutely not their role to write critically of their own failings. Their control of all official military records ensured that no criticism of the General Staff itself could be sustained by anyone else in Germany or elsewhere. They thus ensured that the myth of the infallibility of the General Staff was repaired and perpetuated. Recent work has however looked more critically at the Great General Staff, its plans, and its failings.

Immediately before the outbreak of war in 1914 the several Departments of the Landesaufnahme and the two Departments for Military History together formed one of the five divisions of the Great General Staff, that of Oberquartiermeister V, who was Generalleutnant Herman von Bertrab. He was the Chief of the Preußische Landesaufnahme and as such was the most senior officer under the Chief of the Great General Staff. His division was certainly not peripheral to the activities of the Staff; the study of military history, and training in surveying and military topography, were core subjects of General Staff training both at the War Academy and within the Staff itself. The Preußische Landesaufnahme, due to its large number of civilian technical staff, was the largest component unit of the Great General Staff. Mombauer’s list of the departmental divisions of the Great General Staff omits the departments of Oberquartiermeister V and she dismisses their functions in a sentence. This however underrates their importance; these were the departments that provided the General Staff with its own internal frameworks of reference and its external image. To the German officer corps military history was there to provide examples of success and failure in war; successive Chiefs of the General Staff wrote military-historical works to instruct their trainees how to fight future wars. To the public the symbol of a staff officer was quite simply his map. The image of the staff officer was of an omniscient leader standing imperturbably with a map directing and controlling events on the field of battle. Once the First World War had started, photographs were published of the Kaiser with his commanding generals. A consistent prop in these pictures is a large map on a table, generally hanging over the edge of Mombauer’s book.


27 The other four being the Roman Curia, the British Parliament, the Russian Ballet, and the French Opera. All have since had their problems.

28 Mombauer, op. cit., 36-37. She gives the clearest description of the workings of the organisation, but Arden Bucholz, Moltke, op. cit, gives much more emphasis to the importance of the Landesaufnahme. His understanding of the technology of surveying, map reproduction and map printing is however limited, as is his knowledge of historical geography (e.g. p 33). Bronsart von Schellendorff, op. cit. (1895), 40-43, gives precise organisational detail of the survey and its growth to that date, but the General Staff was restructured in April 1898 and the 1905 edition (39-42) gives much less detail about the subsequent structure. Oskar Albrecht, op. cit., 64, gives the July 1914 internal structure of the survey with the then names of the departmental heads, without relating this to the overall structure of the General Staff.
the table, around which the Kaiser and his generals are shown. The aim was to suggest to the public that the Kaiser himself was in charge (which was not true). On manoeuvre every officer was accustomed to have his own copy of the General Staff Map tucked in his boot-top. In a real sense the departments under Oberquartiermeistern I-IV existed merely to do the donkey-work to enable the lessons drawn from history and maps to be applied practically.

In its years under Helmut von Moltke (the elder) the Great General Staff appears to have been quite outward-looking: from 1869 to 1883 the then Geographical-Statistical Department published an annual Register, reviewing new geographical, cartographical and statistical knowledge of Europe and its colonies.\(^{29}\) Moltke himself had travelled very widely outside Germany. Progressively however the organisation became more secretive and also politically, intellectually and geographically more limited in its outlook. Mombauer attributes much of this change to Alfred von Schlieffen who was Chief of the General Staff between 1891 and 1905. Bucholz however suggests that the trend began in the 1880s under Alfred von Waldersee his predecessor.\(^{30}\)

In 1910 the 1:100,000 Karte des Deutschen Reiches (Map of the German Empire) was finally completed by the Preußische Landesaufnahme. This occasion was not only a source of pride to the organisation (and the other state bodies that cooperated in its production), it was also celebrated as patriotic symbol of the successful union of the individual German states into the Reich. A long account of the genesis and execution of the map, written by von Zglinicki in his role as chief of the Kartographische Abteilung of the Preußische Landesaufnahme, was therefore published in the leading Berlin geographical journal.\(^{31}\) The comparisons he made between his German map and other European maps reveal much about his attitudes to map design and about his knowledge of other countries’ maps. The German map was a monochrome hachured map, hand-engraved on copper plates. It had become old-fashioned long before its completion. Yet by comparing it to other old maps he claimed that his map was better than all others. His knowledge of French, Belgian and Dutch maps seems to have been reasonable (though he seemed disapproving of the differences between the badly out-of-date French 1:80,000 Carte de l’Etat-Major and the much newer and technologically ground-breaking 1:100,000 Carte Vicinale). Comparison of his map to the obsolescent Russian 1:126,000 map was perhaps a smokescreen; over the previous decade his own department had secretly been preparing a contoured 1:100,000 map of western Russia derived from the much more recently (and accurately) surveyed Russian 1:42,000 maps. His statement that no country had been able effectively to update their maps was however incorrect, while his statement that only Belgium and France had a contoured or layer coloured map without hachures was badly wrong; new one inch maps of the United Kingdom, including Ireland, had been prepared in outline form, with contours and no hachures, for over sixty years and the OS was soon to abandon hachures at this scale. In fact his knowledge of British maps seems to have been limited to the hachured Old Series one inch map, about which he was only able to state that since 1872 a ‘reworking’ had been in progress. There was no hint that he was aware of the two subsequent revisions, or the transformation of Ordnance Survey mapping that had been occurring during the two decades.

\(^{29}\) Registrande der Geographisch-statistischen Abtheilung des Grossen Generalstabes (Neues aus der Geographie, Kartographie und Statistik Europas und seiner Kolonien), Berlin, 1869-1883. The first volume was published as a Beiheft (supplement) to the (semi-official) journal Militär-Wochenblatt.

\(^{30}\) Mombauer, op cit., 80-86; Bucholz, op. cit., 102-3.

1890-1910. A certain amount of national chauvinism is only to be expected on such occasions, but von Zglinicki’s appreciation of cartographic developments outside Germany seems to have been limited. Furthermore his evaluations of maps seem to have been based on artistic grounds rather than any utilitarian ones. As he was the man in charge of providing practical maps for an army that expected sooner or later to carry warfare into other countries, this ought not to have been the case. Equally importantly, he appears to have been profoundly complacent about his own maps and he offered no view of their future development.

There is a comparison to be made here with contemporary British extra-territorial military mapping. The inadequacies, due to complacency, of British military mapping during the Boer War had created a public scandal. In 1904 there was a complete restructuring of the War Office with the creation for the first time of a permanent General Staff. Within it was a new Topographical Section under a young veteran of the South African War, Charles Close. The ten years leading up to the First World War became ones of cartographic change, development and innovation. Germany’s colonial wars in South-West Africa and China had been less costly and embarrassing. Although the surveys and mapping available before expeditionary forces were sent out had been no better than Britain’s pre-war mapping of southern Africa, and although much money was also spent making maps after the fighting was over, no general organisational review or change followed.

German complacency was rapidly dispelled at the opening of the First World War. The mobilisation plans allowed for distribution of sets of maps to each unit, not to each officer. The distribution took place before the unit had been notified which front it was destined for, so included sets for both fronts. Despite map re-supply having been found essential in 1870-71 (as von Zglinicki had himself pointed out in 1906), there was no mechanism for this in 1914. As a result units carried large quantities of maps they did not need, while having only one copy of maps they did need. Loss of or damage to that one map could effectively blind the whole unit. The maps of Belgium issued were monochrome copies at 1:60,000 of the by then superseded Belgian 1:40,000 map. The Germans were shocked, when they captured large quantities of British mapping after the battle of Mons, to discover that the cloth backed multi-coloured British 1:100,000 maps of Belgium were more up-to-date, easier to read, and physically more robust than their own maps. On mobilisation only Set I of the German copies of the 1:80,000 quarter sheets of north-eastern France was issued. Set II covering the rest of northern France including Paris was intended to be issued later. By the time set II was needed the advancing armies were not only beyond their supply lines, they were beyond effective communication with the Oberste Heeresleitung (Supreme Headquarters). The troops found themselves reliant on captured maps and on maps liberated from schools and railway stations. Many units fought the Battle of the Marne without maps; the destruction of at least one unit (the Second Battalion, Königlich Preußische Infanterie-Regiment Prinz Louis Ferdinand von Preußen (2. Magdeburgisches) Nr. 27) was blamed on their having no map. The subsequent retreat to the line of the Chemin des Dames was not only a retreat to defensible ground; it was also a retreat to ground for which the German troops had maps.

When fighting returned to Belgium in October and November 1914, there was a failure to

32 Indeed one is left with the nagging suspicion that his only knowledge of the OS derived from 1872.
33 For further reflections of this complacency see Bucholtz, op. cit., 185.
34 This paragraph is largely based on Hans H F Meyer, ‘Die Bedeutung der Karte für Staat und Wirtschaft’, Mitteilungen des Reichsamts für Landesaufnahme 13, (1937), 368-390. See also Oskar Albrecht, op. cit., esp. 5-8.
35 von Zglinicki, op. cit. (1906), 702.
appreciate the potential for inundation of wide areas of low-lying land there. Fairly or not, this was subsequently blamed on a failure by the Kartographische Abteilung to notify the troops in the field that Belgian maps gave heights above a lower datum (mean low water at spring tides) than that of German maps (which equated to mean sea level in the non-tidal Baltic).

At the end of December 1914 a new Chief of the Deputy General Staff, and hence overall commander of the Kartographische Abteilung, was appointed, but this cannot have improved morale, improved communication, or injected new ideas; the appointee was none other than the disgraced Helmuth von Moltke the younger. Not only was this appointment a calculated insult to the man, it was probably also seen as an insult to the organisation. The message was reinforced when in July 1915 Generalmajor von Zglinicki was replaced as Chief of the Kartographische Abteilung; his successor was only a major.

The production of the 1:300,000 and 1:800,000 maps of Britain and Ireland thus took place at a time when scapegoats were actively being sought and when the Kartographische Abteilung felt open to considerable criticism. The requirement for these maps had not been foreseen and up-to-date base material seems not to have been available. They were rapidly produced and accordingly very rough and ready, but for Zeppelin navigation they were probably adequate. Those within the Kartographische Abteilung who had prepared them were perhaps glad that their work was never tested on the ground, and glad that it attracted no publicity.

The inter-war oblivion of these maps was their proper fate. The eventual reproduction in 1939 of the ‘Dover’ 1:300,000 sheet by the Reichsamt für Landesaufnahme was probably a major political mistake. It simply drew attention to old failings that might better have been forgotten. By then the struggle for primacy between the civilian Reichsamt and the military Kriegskarten und Vermessungswesen was well under way. Production of this antique sheet cannot have given much practical assistance to the conquest of France, but it must have provided ammunition to support the military’s assertion that the Reichsamt had no idea of what was needed for modern warfare.

There were also later consequences of the Kartographische Abteilung’s pre-First-World-War failings. During the inter-war period lessons were drawn from the experience of the First World War, in particular about the importance of collecting up-to-date foreign maps and geodetic data. The Reichsamt für Landesaufnahme thus published a series of studies of foreign mapping organisations in its house journal. Within the re-established General Staff, from 1936 onwards the collection, evaluation, cataloguing and co-ordination of foreign maps and geodetic data, and the production of ‘Planhefte’ containing the results, became a major element of the work of General Hemmerich’s Kriegskarten- und Vermessungswesen. A goal that logically arose from this work, at a time when Hemmerich had control of almost every geodetic office in the continent, was the establishment of a single unified geodetic framework for the whole of continental Europe. This project was still incomplete when Germany was defeated in 1945, but its continuation was to become a core activity of the post-war Institut für Angewandte Geodäsie, which had largely been established using personnel from Hemmerich’s organisation.

Postscript: as Sheetlines was going to press a further example of OS-derived mapping of Britain by the Kartographische Abteilung has been discovered. This is a copy of England & Wales 1:63,360 sheet 6, Alnwick (Holy Island), dated 1914. Full details are not yet available.