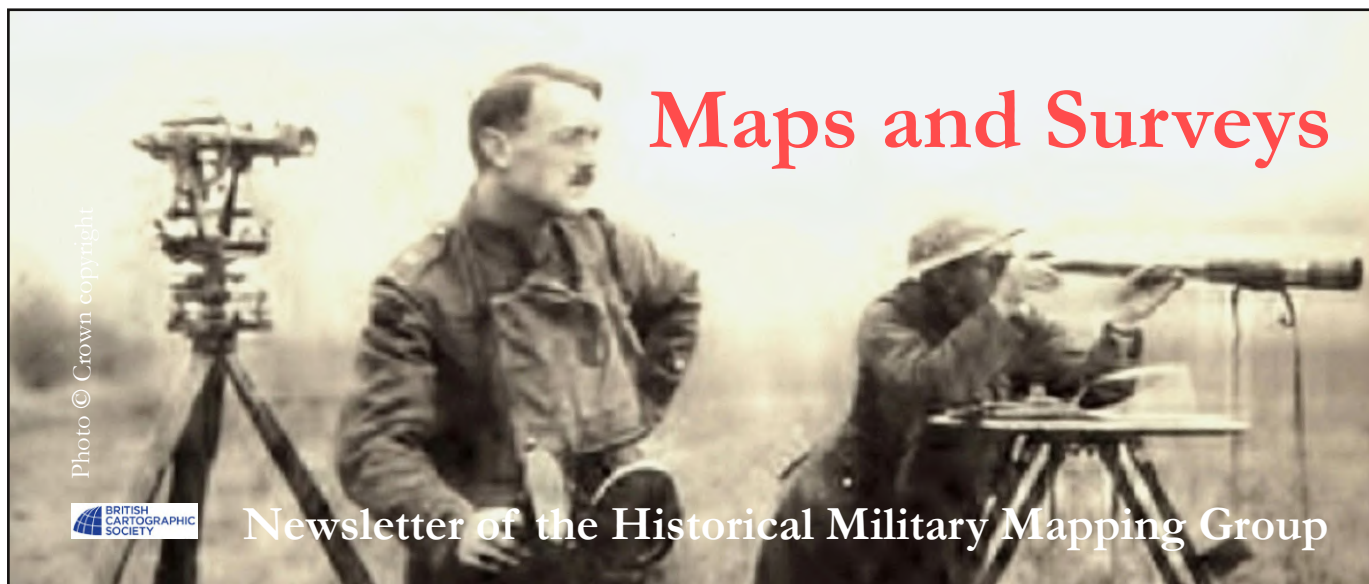




Maps and Surveys appears in spring, summer and autumn. The Newsletter welcomes contributions - please contact Liz Bourne, BCS Administration (admin@cartography.org.uk) for information. Editor: Paul Hesp (Paul.Hesp@drei.at).

Spring 2023

From the editor

The Czech town of Znojmo (Znaim)

Paul Hesp *Vorspann, Schneeverwehungen - the Marschrouutenkarten of the Austrian empire's army*

Paul Hesp *Pointing a finger - Which map did Major Pike tap - and why?*

Notice Board

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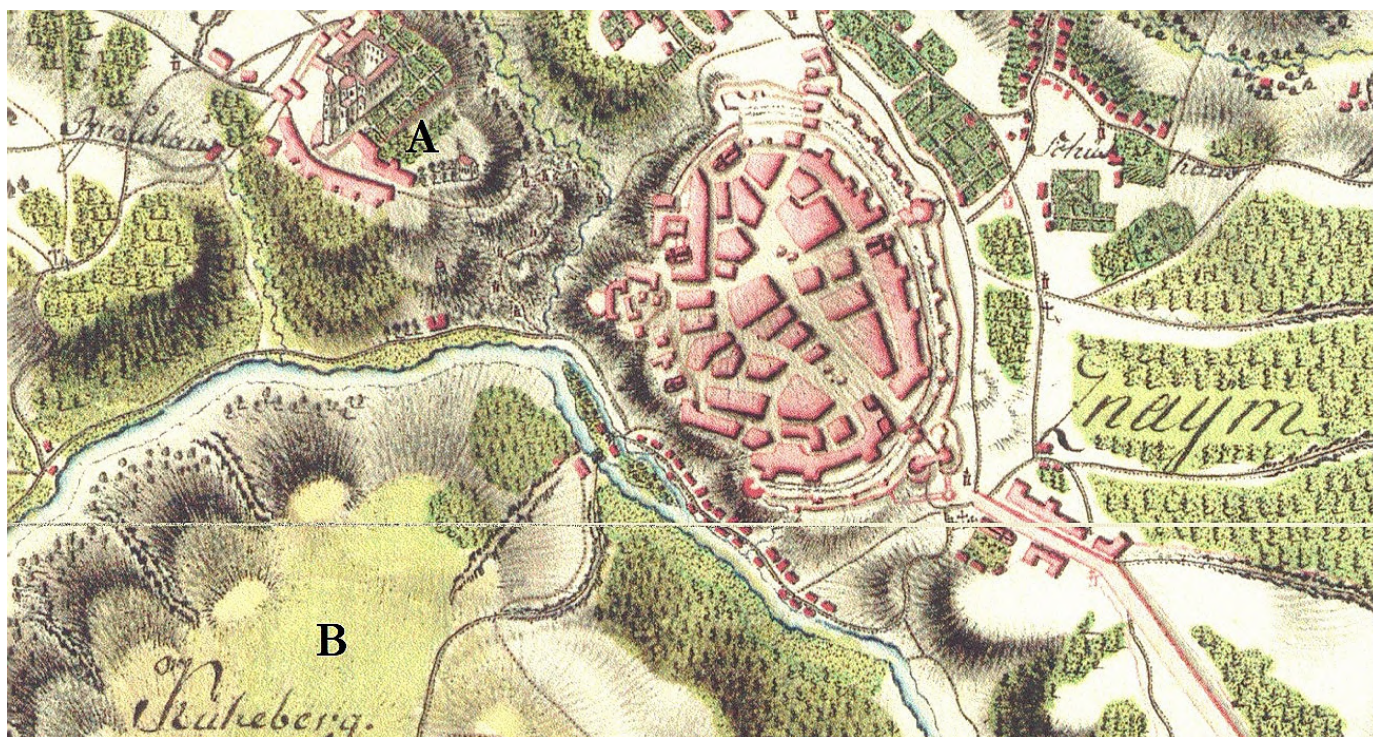
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From the editor

An army not only marches on its stomach, but also on roads. Most of this issue is devoted to the Austrian empire's *Marschrouutenkarten*, forerunners of our modern road maps. The second article identifies an Allied map briefly captured on film in autumn 1944.

Paul Hesp



THE CZECH TOWN OF ZNOJMO (ZNAIM). Znojmo is strategically located at a meeting point of routes near the Austrian border where spectacular, easily defended bluffs overlook a ford (later bridged) in the river Dyje (Thaya). Most buildings in the old city still stand, as does the wall on its east side. Curiously, the church of St. Hyppolit and the St. Antonin chapel in Znojmo's oldest part, Hradiště (A), are shown axonometrically. Znojmo was long a garrison town, and Kub(e)berg (Kraví Hora, B) heath, now part of a national park, still shows traces of army training.

Fragment of sheet 110 of Austria's First Military Survey (1764-1768, 1780-1783) © Geoinformatics Laboratory, University of J.E.Purkyne (can be viewed on oldmaps.geolab.cz). Many thanks to Jaroslav Hrabal.

Paul Hesp - VORSPANN, SCHNEEVERWEHUNGEN

The *Marschroutenkarten* of the Austrian empire's army



Figure 1: General legend of the Marschroutenkarte set; each map has a separate legend for local information. Source: Collection author.

As part of the Austrian army reforms undertaken in the late 18th century, a 'mobilisation plan' was formulated in 1779. Among other things, it required territorial commanders to prepare *Marschroutenkarten* (literally: marching route maps) for the area under their responsibility. These would help identify the best routes to an area of action, which implied collecting all relevant infrastructural information, such as road conditions (surface, gradient), stretches prone to flooding and snowdrifts, status of bridges, river ferries and accommodation.

In the 1860s and 1870s, the Austrian Military-Geographical Institute, building on these early efforts, published 56 *Marschroutenkarten* covering the whole empire. The maps, at scale 1:288,400, were derived from the 1809-1869 Second Military Survey (scale 1:28,800). The last maps were completed in 1877. Later, the 1:200,000 *Generalkarte* produced in the course of Third Military Survey (1869-1887) was used in revisions, and a number of sheets at scale

1:300,000 was prepared. They were not only used for *Instradierung* (transport planning) by the military, but also by other governmental bodies, which contributed to map revisions.

The maps were updated regularly until the outbreak of World War I, with updates announced in official journals and various other periodicals. They were available to the general public, but the set of four 54x76 cm maps in my possession is priced at 40 Austrian crowns, which was then roughly the monthly income of a skilled worker. The maps were complemented by a manual with detailed route information.

In the notoriously bureaucratic Austrian empire, this complex undertaking must have left a highly visible paper trail, but various trawls through Viennese archives only produced patchy information, of which the above is a summary. The fact that *Marschroutenkarte* is a fairly common term didn't help searches. So, let's see what the maps and the manual can tell us.

The maps and the manual

My set covers the present *Länder* (provinces) Salzburg, Upper and Lower Austria, roughly the northern half of Austria. The maps mainly show road connections over which large bodies of troops could be moved, plus railways. In the Alps, large areas of the maps are therefore blank. With the exception of rivers and lakes, no topography is shown.

Figure 1 shows the different road categories (column 3), ranging from *Chaussée* to footpath. In the countryside, *Chaussées* were the only paved roads, sand and gravel on a bed of stones. *Chaussées* and the next two categories, *Landstrasse* (loose-surface main road) and *erhaltener Landweg* (maintained country road), were kept in repair; the remaining three categories of tracks were often unpassable in winter or prolonged rain. Settlements and staging posts (column 1) were marked with a special symbol (flagged dot, post horn) if they had railway stations and stage coach stops. The latter were

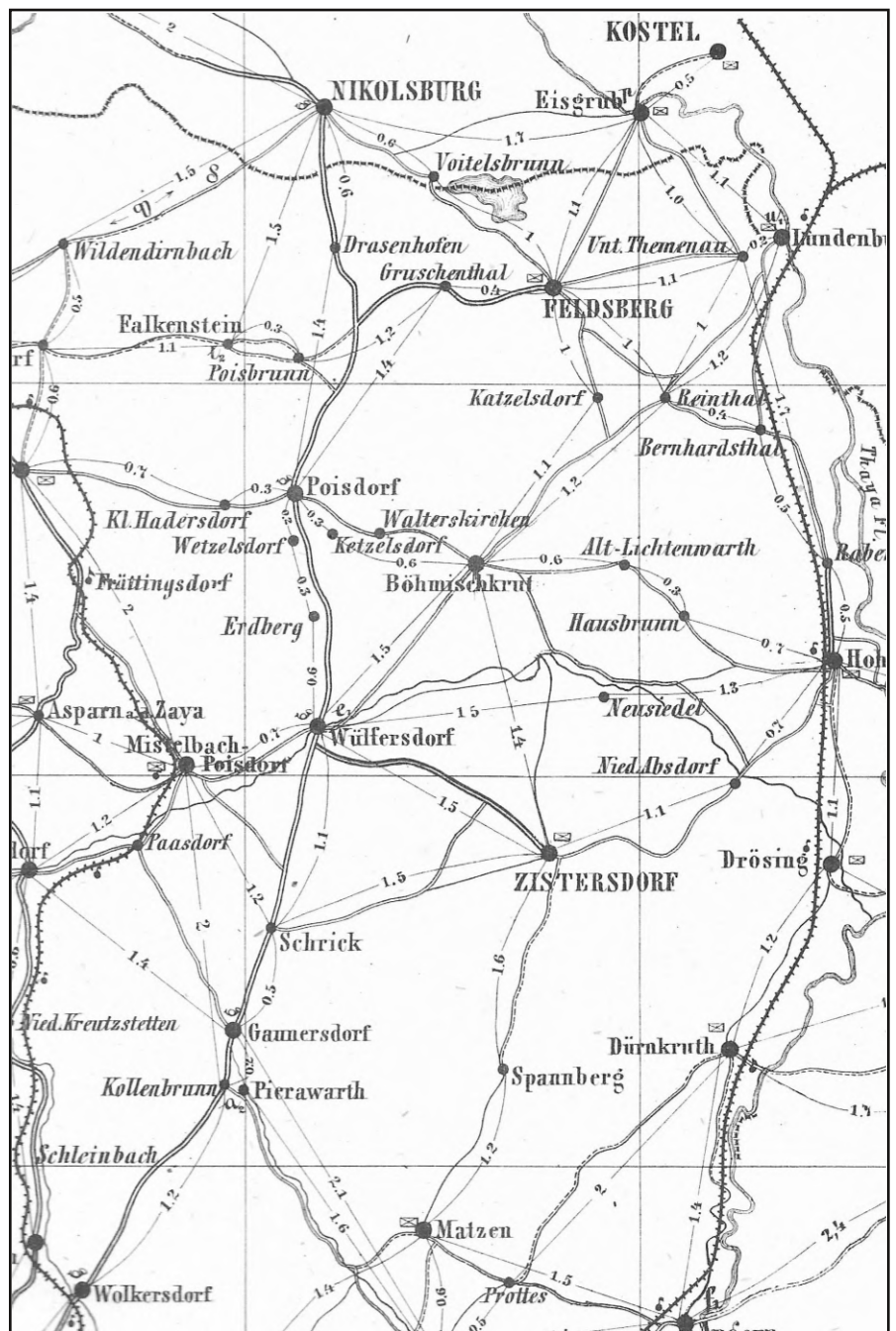
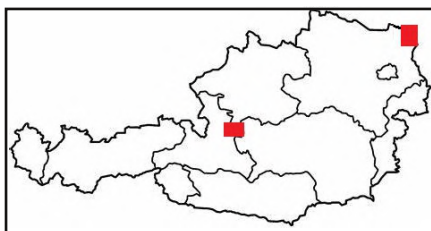
beginning to disappear.

Each map has a long list of symbols – letter and number combinations – for local information on stone and wooden bridges (the latter often in dubious condition), accommodation limits, avalanche danger, and so on. The lists are not standardised across the maps.

The manual, the *Marsch-Routen-Buch*, consists of tables listing starting points and destinations, plus an index. It has columns for different routes, main and intermediate halts or staging posts, march stages, road type, remarks on road conditions and space for annotations. The bulk of the manual is devoted to *Hauptverbindungen*, main road and rail routes radiating from Vienna and twelve other transport nodes, with various route options. A section on *Zwischenverbindungen* shows routes between two main routes or leading to selected locations off such routes. The manual thus reflects the spider's web of connections on the map.

Maps and handbook give distances in Austrian miles (1 mile = 7.586 k.; fractions are in eighths of a mile). Road travel was at marching speed: horse-drawn transport was estimated to need 1½ hours for a mile. The length of march stages varied (route characteristics would be a determinant), but the average is roughly 15-20 k.

To give an idea of the different transport conditions, two contrasting map fragments follow: one of part of the Brünner Strasse, the main road from Vienna to Brünn (Brno, the second-largest city in Bohemia-Moravia) through the rolling hills of



Map 1: The Brünner Strasse between Wolkersdorf and Nikolsburg (Mikulov). On the right of the map, the Vienna-Brno railway line can be seen.

the Weinviertel region; the other of the Hallstatt area deep in the Alps, where the *Länder* Salzburg, Upper Austria and Styria meet.

The Brünner Strasse

The Brünner Strasse follows an ancient trading route connecting Vienna and the Baltic. It was built in the 18th century as one of five *Chaussées* radiating from Vienna. Napoleon's armies used the Brünner Strasse as their main axis of advance after the battles of Austerlitz and

Wagram. Map 1 and Figure 2 (next page) give an impression of the road near the border with Moravia. Old photos show that the character of this and other *Chaussées* did not change much until the 1920-30s, when they were upgraded for motorised traffic. Apart from a few short sections, gradients were limited; thaws or prolonged rain, however, could turn minor roads leading off the Brünner Strasse into seas of mud.

The road section shown on Map 1, from Wolkersdorf to the Moravian



Figure 2: The Brünnner Strasse north of Poysdorf, 1844, with Falkenstein castle on the horizon. The ‘choppy sea’ is a slight exaggeration of the actual hills. Source: Jostmann 2009

border town Nikolsburg (Mikulov) only had a short steep section just north of Poysdorf (Poysdorf), where a *Vorspann* was needed, an additional horse team. In the case of the Brünnner Strasse, draught animals were not hard to find: in 1855, there were nine staging posts with 200 horses along the route; elsewhere, farmers who owned draught animals could be

obliged to provide a *Vorspann* against payment. The road passed over a stone bridge (e1) at Wilfersdorf.

Transport could be more problematic off the *Chaussée*. The *erhaltene Landweg* between Nikolsburg and Wildendürnbach (Wildendürnbach), for example, required additional horses in both directions of travel ($\leftarrow V \rightarrow$) and was prone to

Schneeverwehungen (S) or snowdrifts. A similar country road to Falkenstein was only suitable for minor transports (t2).

Figure 3 shows part of a manual page with the last route section to Mikulov. The total number of stages is six for a distance of 96/8 miles, about 74 k. Another handbook page with connections to Moravia notes that the train from Vienna to the Moravian border station Lundenburg (Břeclav), on a line running roughly parallel to the Brünnner Strasse further east (see Map 1), takes three hours and 43 minutes. Rail transport was six times faster than road transport.

Figure 3: The last section of the route to Nikolsburg (Mikulov) in the Marsch-Routen-Buch.

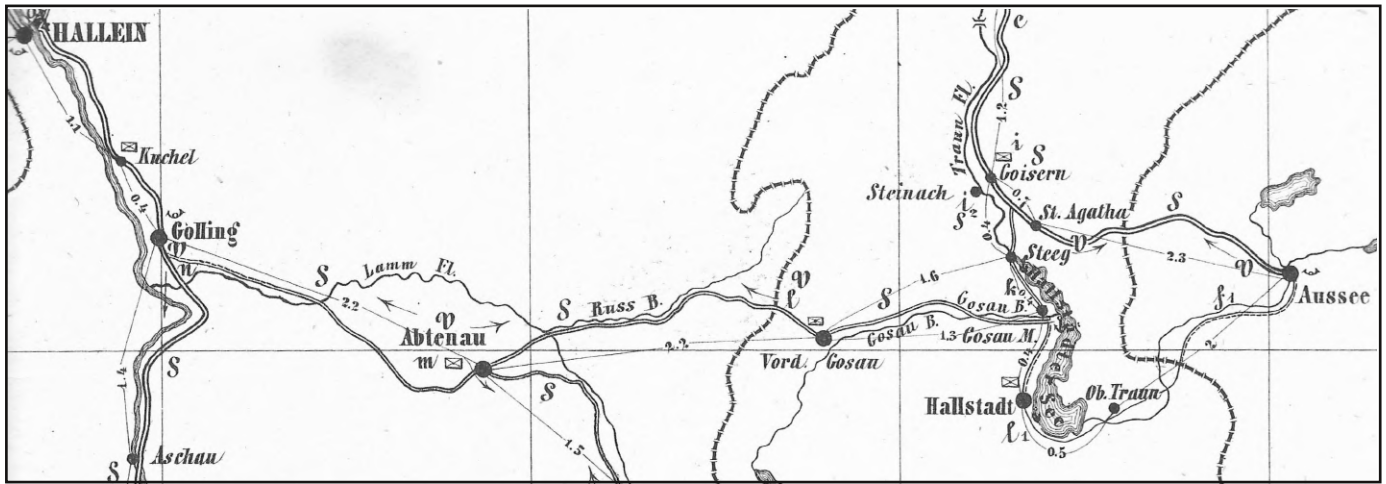
Haupt-Routen.

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Route			Ueber	Entfernung in Meilen à 4000 Ktn.		Anzahl der Märsche	Charakter der Wege	Anmerkung	Berichtigungen
Nr.	Von	Nach		der Zwischenorte der Marsch- stationen	der Märsche				
59	Nikolsburg in Mähren, Richtung auf Brünn, über Poisdorf		Siehe Nr. 34 bis Poisdorf	. . .	7 $\frac{1}{8}$	5	Chaussée	Von Drasenhofen bis zur Grenze $\frac{2}{8}$ Meilen.	
			Drasenhofen .	1 $\frac{1}{8}$	. . .	.			
			Nikolsburg . .	6 $\frac{1}{8}$	2 $\frac{2}{8}$	.			
			Summe . . .	9 $\frac{9}{8}$	6	.			

Hallein – (Bad) Aussee

This west-east route in the Alps (Map 2) follows a series of valleys, with steep sections on the way, culminating in the 957 m. Gschütt pass on the border of Salzburg and Upper Austria. Hence the need for a *Vorspann* (V, f1, m) over most of



Map 2: The route from Hallein to (Bad) Aussee.

the route. The area had numerous wooden bridges in varying condition (e, f1, i, i2, l, m, n) and the route was a mix of the three top road categories; if the route via Obertraun was taken from Hallstatt (Hallstatt), part of the way was on a

packhorse track. The longer route via St. Agatha will often have been more convenient. Because of the terrain, dramatically illustrated by Figure 4, snowdrifts, avalanches and road collapses (S, k, l, l1, m, n) were common. Hallstatt (Hallstatt) is

essentially still a one-street town squeezed in between the 1953 m. Plassen mountain and Lake Hallstatt, though a bypass has been tunnelled through the mountain.

The manual (Figure 5, next page) reflects the transport difficulties noted on the map. For the section Abtenau - Hallstatt, the boxes with remarks consecutively mention:

- Wooden bridges over the Lammfluss and the Russbach; route sections requiring extra horse teams; snowdrifts, avalanches and road collapses;
- Snowdrifts, avalanches and road collapses;
- Inadequate accommodation.

The distance of 125/8 miles (about 95 k.) from the railway terminal Hallein was covered in six stages. While the railroad would reach Golling and Bad Aussee in the 1870s, the passes between Golling and Hallstatt long remained an obstacle to travel. The post bus still needs almost two hours for the 50 k. on the modern road between those places.

After a variety of occupations, Paul Hesp studied Geography at Amsterdam University. He later settled in Vienna, where he worked for the UN Industrial Development Organization. Maps have fascinated him since he was given his first school atlas.



Figure 4: The valley of the Gosaubach looking upstream, by Bertha von Grab, 1874. The challenges posed by the terrain are obvious. Source: Wikimedia Commons

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Salzburg

Aussee in Steiermark, über Hallstadt

Route			Ueber	Entfernung in Meilen 1 1000 Kln.		Anzahl der Marsch- stationen	Charakter der Wege	Anmerkung	Berichtigungen
N r.	Von	Nach		der Zwischenorte	der Marsch- stationen				
			Hallein	2	.		Chaussée	Hölzerne Brücken über die Salzach, Alm, den Tangl- und Tuschbach.	
			Golling	1 $\frac{1}{8}$	.				
			Abtenau	2 $\frac{3}{8}$	.		Landstrasse	Hölzerne Brücken über den Lammbach und den Rusbach. — Zum Theil Vorspann nöthig. — Schneeverwehungen, Lavinestürze und Strassenabrutschungen.	
			Gosau	2 $\frac{3}{8}$	.				
			Gosauühle	1 $\frac{3}{8}$	.		Chaussée	Schneeverwehungen, Lavinestürze und Strassenabrutschungen.	
			Hallstadt	$\frac{4}{8}$	17 $\frac{1}{8}$		Erhaltener Landweg und Saumweg	Mangelhafte Unterkunft.	
			Obertraun	$\frac{5}{8}$	.				
			Aussee	2	2 $\frac{3}{8}$	.			
			Summe	12 $\frac{3}{8}$	6				

Figure 5: The route from Hallein to (Bad) Aussee in the Marsch-Routen-Buch.

Sources

Jostmann, Christian, Lukáš Fasora and Ulrich Winkler-Hermaden - *Die Brünner Strasse, Eine Geschichte des Verkehrsweges von Wien nach Briinn in Bildern*, Schleinbach 2009

Kaiserlich-königliches Militärisch-Geographisches Institut - *Marschroutenkarte des Erzherzogthums Oesterreich und Herzogthum Salzburg*, Wien 1868 (four sheets)

Kaiserlich-königliche Hof- und Staatsdruckerei - *Militär-Marsch-Routen-Buch für das Erzherzogthum Oesterreich mit Salzburg*, Wien 1864

Mittheilungen der kaiserlich-königlichen Geographischen Gesellschaft, various issues

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Österreichische Zeitung für Verwaltung, various issues

Die Spruchpraxis, Revue über die Rechtsprechung, 17. Jahrgang, 4. Heft, 1. Juli 1900, S. 240-242

Paul Hesp - POINTING A FINGER

Which map did Major Pike tap - and why?

It is well known that, in autumn 1944, the Allies had great trouble clearing the area between the river Meuse and the 'corridor' through the Dutch province of North Brabant created during Operation Market Garden. As part of that operation, the village of Asten had been liberated on September 22; Liessel, seven kilometres further east, a day later. The frontline froze at the Peelkanaal, three kilometres east of Liessel.

A German attack across the canal saw that village reoccupied on 29 October, but the enemy was stopped a few kilometres from Asten. After the US troops in the area had been relieved by British troops, the latter mounted a counterattack. According to a detailed study of the liberation of the Netherlands (Klep and Schoenmaker 1995, p. 226), the village was in British hands by the afternoon of October 31.

Some of the action was caught on film and photo by Army Film and Photo Unit (AFPU) cameramen. The photo is a still from a film shot by Sgt. George Laws in the Asten-Liessel area which can be seen in full on the Imperial War Museum website. From 00.21, it shows a squadron commander, Major Pike, holding a conference with his troop leaders. He points at something on the map with his little finger and, as the camera zooms in, taps a patch of woodland with his middle finger. The first shot of the film gives the date 29 October.

The Meijel-Liesel (sic) reference in the film description prompted a search on the Dutch Topotijdreis website (see link below) where all topographic maps, from the 1850s onwards, are displayed as a seamless map. The location was soon found, thanks to the outline of the woods, but the tank crews would of course



Major Pike puts his finger on a potential trouble spot. © IWM A70 197-1



Fragment of AMS/GSGS map Holland 1:25,000, sheet 27 N.W. Asten (details next page). (Source: CC-BY Kadaster)

have used the Army Map Service/General Staff, Geographical Section maps. Scans of many of these are available from Dotka (see link below).

A fragment of the map in question is shown above. Major Pike's little finger was pointing at Liessel; his middle finger tapped a tricky spot

(circled) where the woods meet a sharp bend in the Asten-Liessel road. Just south of the road another patch of woodland, shown under his hand slightly later, was the scene of heavy fighting.

Interestingly, photographer Sgt. Morris took a picture at the same spot. However, it is dated 1

November on the IWM website (B 11567), along with a number of other pictures he shot in the Liessel area. Given the other information available on the action, it could be that the date on the 'dope sheet' he would have sent back with his exposed films, detailing his work, covers several days.

Reference and links:

Chris Klep and Ben Schoenmaker – *De bevrijding van Nederland 1944-1945, Oorlog op de flank*, 's Gravenhage 1995
<https://www.iwm.org.uk/collections/item/object/1060008503>

<https://www.topotijdreis.nl>

<https://www.dotkadata.com>

<https://www.oorlog-depeel.nl/kaart-de-peel-bevrijd/> This site offers a detailed map of the actions, war cemeteries and memorials in the area for € 2 + postage. 10% of the proceeds go to war grave maintenance. Dutch text.

Many thanks to Cor Slaats, Heemkundekring Deurne, for sharing thoughts on the dating of the pictures.

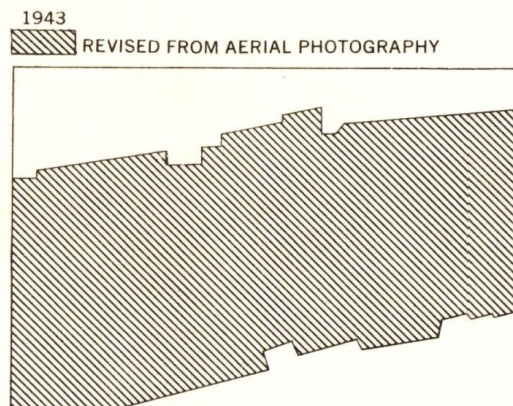
A.M.S. M831 (G.S.G.S. 4427)

First Edition 1943

Prepared under the direction of the Chief of Engineers, U. S. Army, by the Army Map Service (GE), U. S. Army, Washington, D. C., 1943. Compiled from Netherlands Topographische Dienst Maps, 1:25,000 1921-1934.

Partially revised from 1943 aerial photography.

Principal communications revised from: Intelligence Reports; Automobile Map of the Netherlands, 1:200,000, K.N.A.C., 1937; Michelin Road Map, 1:200,000, Service Geographique de l'Armée, 1940; Railroads and Waterways of Holland, 1:300,000, G.S.G.S., 1942.



Source material for sheet *Asten 27 N.W.*

Notice Board

Military Cartography (ed. Mirela Altić), *Fascicolo Speciale 2, Nuova Antologia Militare*, September 2022

This free download of the *Nuova Antologia Militare* covers a broad spectrum of topics related to military cartography as a 'state activity', to borrow Jeremy Black's term from his introductory essay. Most contributions are in English. The essay on Habsburg military cartography of that empire's Croatian borderlands by Mirela Altić traces its history back to the 16th century, and the article by Belogi and Leoni spans the evolution of aerial imagery from balloons to drones; otherwise, the focus is on the two World Wars. Aerial photography already played an important role during World War I, as the case study by Ferrarese and Bondesan on updating maps of the Piave front shows. But the most curious map of the Piave front is probably the one showing the location of Italian carrier pigeon stations in the contribution by Massimo Rossi. At the other end of the topographic scale, Eric Losang discusses German war atlases made for the general public during World War I. Aerial photography was of crucial importance during World War II, as illustrated by Collier's contribution on mapping for Allied

forces in Italy. Bracke's contribution on the role of Belgium's topographic service during that war throws light on its precarious relationship with the German occupiers.

Link: <https://www.nam-sism.org>

A map of a catastrophic year

1672 was a catastrophic year for the Dutch Republic: the country was attacked by the French, the British and several German prince-bishops. The *Rampjaar* was commemorated last year in various ways. One interesting result for cartographers was the creation of an online 'story map' of the fighting in the northeast of the country, completed at the end of the year. The stories cover many aspects of the war, from the character of fortifications and the role of cavalry to the fate of a miller and his wife.

While the stories are all in Dutch, the interactive map is of special interest to cartographers because its basis is a large (71x258.5 cm.) and large-scale contemporary map made by the surveyor, painter and supervisor of public works Jannes Tideman. Fascinating detail when you zoom in, plus detailed information on the map itself.

Link: <https://kaart1672.nl>



A German encampment near Groningen, with troops marching. Fragment of Kaart 1672.

Georeferencing of the Allied trench-maps of the WW1 Salonika front

This essay discusses the surprisingly accurate mapping of a largely forgotten WWI front by the Entente forces on the basis of the British-French Macedonian Triangulation. Free download at researchgate.net.