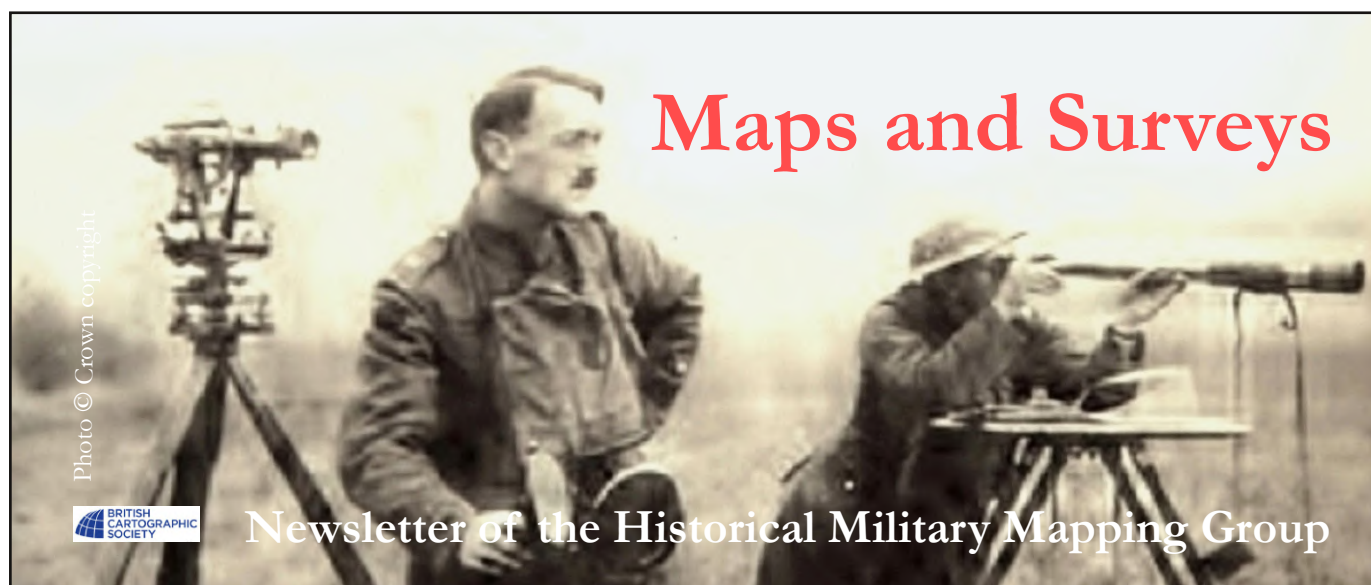




Maps and Surveys appears in spring, summer and autumn. The Newsletter welcomes contributions - please contact Liz Bourne, BCS Administration (admin@cartography.org.uk) for information. Editor: Paul Hesp (Paul.Hesp@drei.at).

From the Editor

The EuroCarto 2022 conference, which took place in Vienna from 19-21 September at Vienna's Technical University, was a great success: chock-a-block lecture halls, dozens of poster sessions and a plentiful supply of proper Viennese coffee and pastry. Military cartography was not a conference topic, but several speakers made presentations touching on the subject and opening interesting new perspectives for *Maps and Surveys*.

We start this issue with a contribution by one of the conference speakers, Ayako Kagawa, Chief GIS, UN Interim Force in Lebanon, on the use of maps in peacekeeping, specifically in the Middle East. Also in this issue: a visit to a 19th century series of earthworks near Vienna with a 19th century map, by Frits Wittgreffe, and a note by the undersigned on the yearbook *Quaderno SISM 2020*, made available by the Società Italiana di Storia Militare as a free download.

Paul Hesp

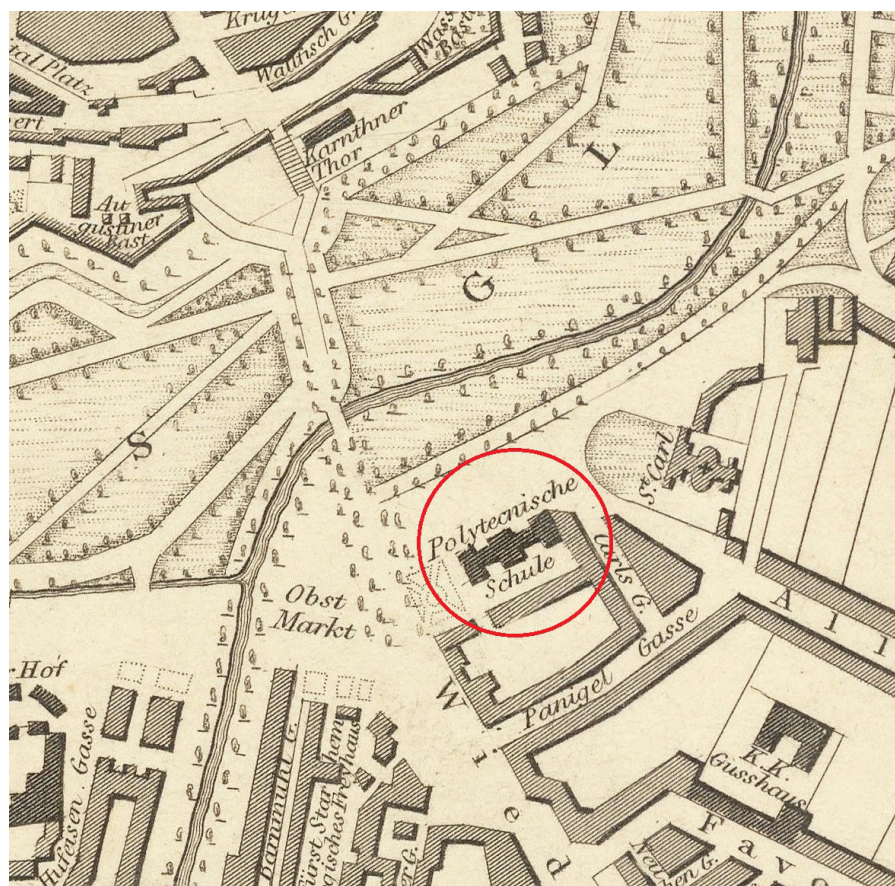
Autumn 2022

From the Editor

Ayuko Kagawa *United Nations Peacekeeping Deployment Maps in the Middle East Region*

Frits Wittgreffe *Traces of a rush job*

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The original Technical University ('Polytechnische Schule') building in the Wieden suburb, on an 1833 map prepared by the British Society for the Diffusion of Useful Knowledge. The map also shows part of Vienna's city defence system, dismantled a generation later: the wide glacis, the ramparts and one of the main gates, the Kärnthner Tor. The stream is the river Wien, which gave its name to Vienna. (Source: Wikimedia Commons).

Ayako Kagawa - *United Nations Peacekeeping Deployment Maps in the Middle East Region*

Since the establishment of the Organization in 1945, the United Nations (UN) Secretariat has used cartography to support its mandates and operations. The Geospatial Information Section, formerly known as the Cartographic Section, provides geographic support to the UN Secretariat, including the production of small-scale paper maps, such as peacekeeping deployment maps, as official UN records. Deployment maps are primarily attached to Security Council and Secretary-General's reports, which provide the latest situation of peacekeeping operations. They illustrate the strategic deployment presence of UN peacekeepers through Member State troop and police contributions. Readership of these maps is diverse, ranging from the diplomatic community of the UN to students working on academic theses.

Common operational symbology

The military deployment symbols provide a common operational symbology of command, control, communications, computer and intelligence (C4I) information. They contain a subtle strategic semiotic message on how the Organisation maintains international peace and security.

Military symbols began to be used in the decades following the Napoleonic Wars. Later, harmonisation efforts were undertaken, including those for the British and French systems during the First World War. The United States Army Corps of Engineers in 1917 devised a system which was based on the graphic components of frame, fill, icon and modifiers (see Figure 1). The formation of NATO in 1949 allowed



Figure 1. Basic military symbol composition elements and example of interpretation of two UNIFIL military symbols.

the US Army system to be adopted widely, especially with regard to symbolisation for friendly, hostile and unknown forces. The UN, established after the Second World War with the central mission of the maintenance of international peace and security, adopted the symbols used by NATO and adapted them for its own purposes.

The original NATO Military Symbology for standard military map symbols was published in 1986 and has evolved over the years. The current NATO system dates from 1991 (see NATO Joint Military Symbology document under References). The United States of America is its custodian. The symbols are designed to enhance NATO joint interoperability and provide a joint military symbology for land, air, space and sea-based formations and units. The UN has adapted it for its own use.

Military symbols provide a framework for information on affiliation, battle dimension and operational status through graphic representation of units, equipment, installations, activities, control measures or tactical tasks. The icons can be understood as combinations of elementary glyphs with composition rules. Its listing can be extensive, but in the UN context, efforts are made to limit this to ensure common understanding across the peacekeeping force, which consists of troops from a wide

variety of UN Member States. The fill is the area within the symbol, but its use is somewhat limited in the context of the UN, as – again – the majority of symbols depict friendly joint forces of UN Member States who contribute the troops and police.

The UN's deployment maps

While Security Council resolutions and Secretary-General reports provide details of the mission, deployment maps have the advantage of providing an instant overview of the peacekeeping contribution by UN members.

The maps are revised by UN headquarters ahead of the missions' mandate review, which takes place every three or six months, depending on the mandate cycle agreed by the Security Council. The political affairs officers focus on the content of the Secretary-General's report while the military officers in the Office of Military Affairs (OMA) of the Department of Peace Operations (DPO) reach out to the field mission's Chief of Staff to confirm the content of the military deployment information, based on the narrative and the latest troop contribution situation on the ground.

Once the deployment information is confirmed, the geospatial experts in the Geospatial Information

Section will revise the deployment symbols accordingly. Once the draft is reviewed and agreed between the UN field mission and headquarters, the map is finalised and attached to the Secretary-General's report, which becomes the official UN document. The Geospatial Information Section team shares the latest deployment map on the UN Geospatial website; the United Nations Digital Library keeps a record of all the archived maps.

The importance of the role of deployment maps and the cartographers is demonstrated by the fact that during the 1970s and 1980s, the request for map updates came directly from the mission's Force Commander to the Secretary-General to the Section. In the 1990s, this communication was delegated to the Under-Secretary-General of the newly established Department of Peacekeeping Operations (DPKO). With the great increase in peacekeeping mission files in the 1990s, this communication flow was delegated further down to the operational level of today's Office of Military Affairs. This also reflects the democratisation of information within the Organization.

Examples of military deployment maps in the region of the Middle East

Whilst it is well known that the United Nations Truce Supervision Organization (UNTSO) is one of the earliest peacekeeping missions of the Organization, established in 1949 to supervise the implementation of the Armistice Agreements in the Middle East, the deployment map series was not introduced until 1997 (Map No. 4012 series). The reason may be that UNTSO consists only of military observers whose operational command comes under two other, neighbouring peacekeeping

missions: the United Nations Disengagement Observer Force (UNDOF) and the United Nations Interim Force in Lebanon (UNIFIL). The two Force Commanders have their respective operational command authority.

The first deployment map publicly disseminated by the United Nations was that of the United Nations Emergency Force (UNEF) deployment in Gaza in August 1957, which helped to end the Suez Crisis through the establishment of an international peacekeeping force between Egypt and Israel (Map 1, p. 4). However, the use of military symbolisation was not applied consistently, as the 1967 UNEF map demonstrates (Map 2, p. 4).

Among the early deployment map series using an identical cartographic style is that of the United Nations Disengagement Observer Force (UNDOF), which was established in May 1974. Its first deployment map dates from November 1976, and it is one of the longest available map series to this day, the latest deployment map being revision number 120 (Map 3, p. 5). UNIFIL, which shares parts of the operating theatre, had its first deployment map published in September 1978 and has consistently maintained the practice of depicting UN presence in UN blue. While UNIFIL's presence has been continuous, its mandate has changed after 2000, and therefore there are two map series (Map No. 3000 and 4147 series) to distinguish between the mission mandates. This is also common practice among other peacekeeping missions whose presence continues but whose mission mandates and therefore its field mission names change (e.g., the UN Mission in the Democratic Republic of the Congo [MONUC] to UN Stabilization Mission in the Democratic Republic of the Congo [MONUSCO]). As a consequence, the map number changes.

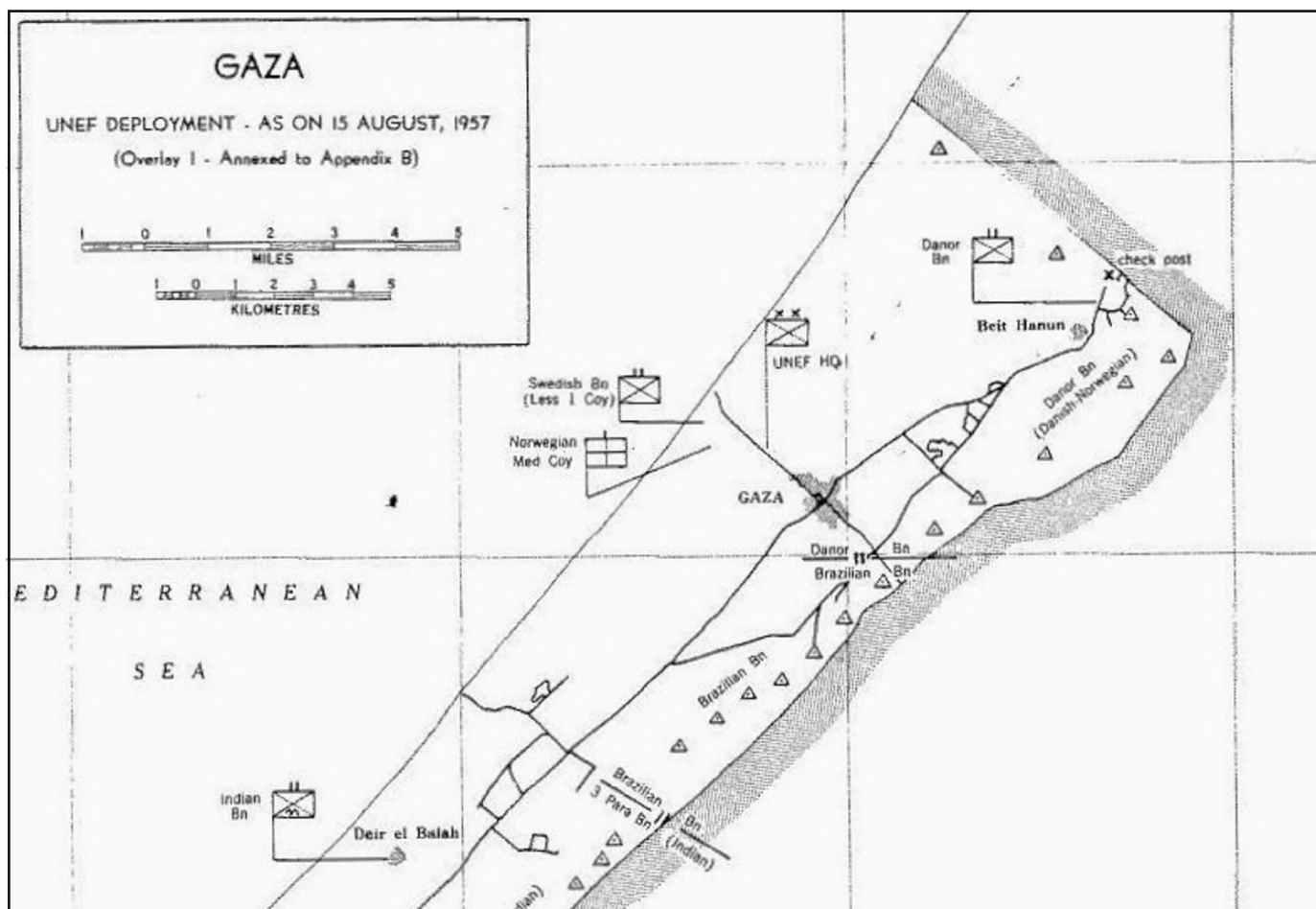
Conclusion

As long as the Organization continues to have the Security Council and its peacekeeping missions in the field, it is most likely that deployment maps will continue to provide a semiotic overview of the contribution of the international community to international peace and security.

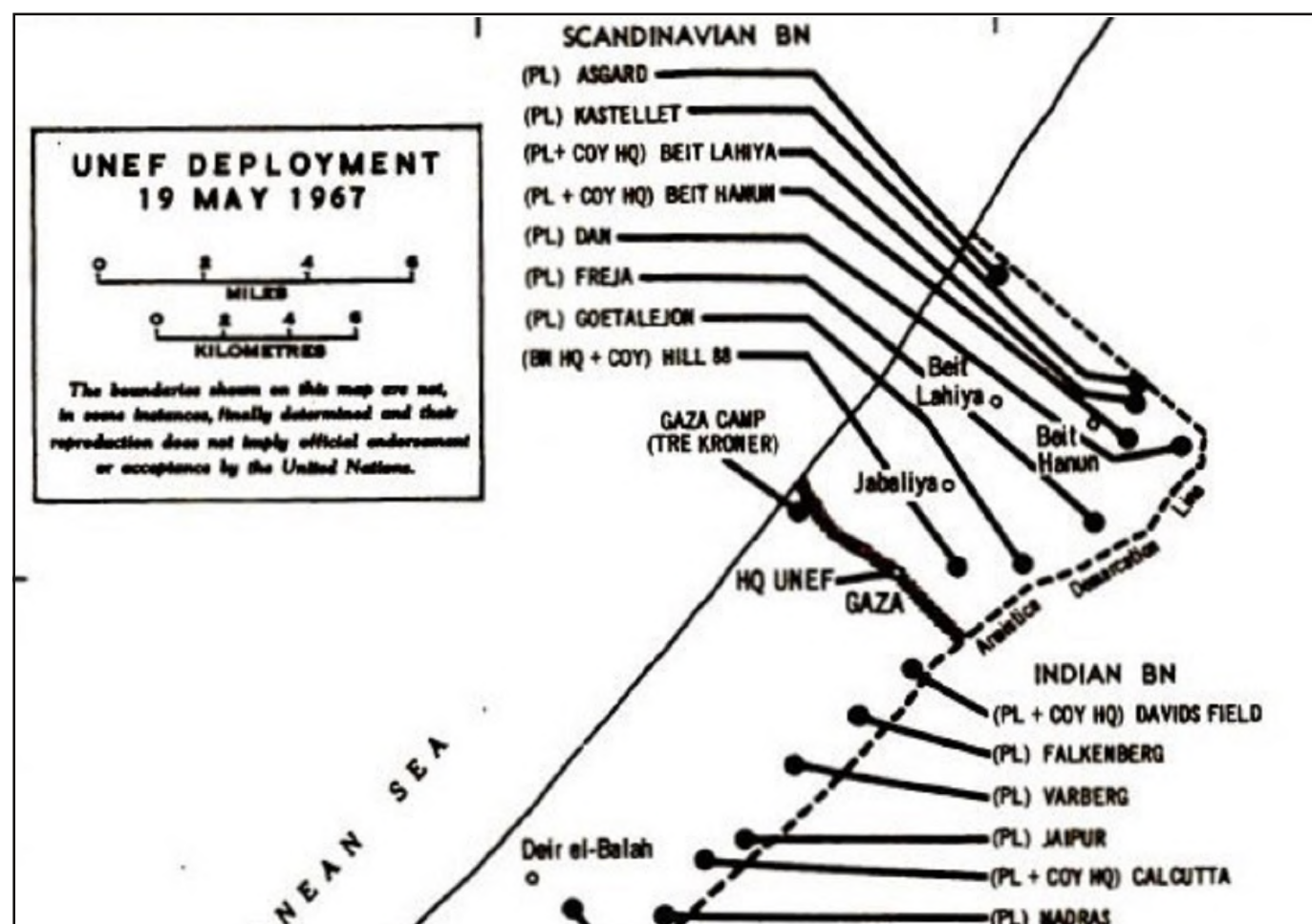
Ayako Kagawa is a Geographic Information Officer at the United Nations, currently serving as the Chief GIS of UNIFIL in southern Lebanon. Prior to UNIFIL, she provided guidance on international boundary and disputed territorial issues, and geographical services for the mandates and operations of the UN Secretariat. She has recently contributed to Mapping for a Sustainable World, which shares best cartographic practices and conventions to support decision-making for and promote public awareness of the Sustainable Development Goals.

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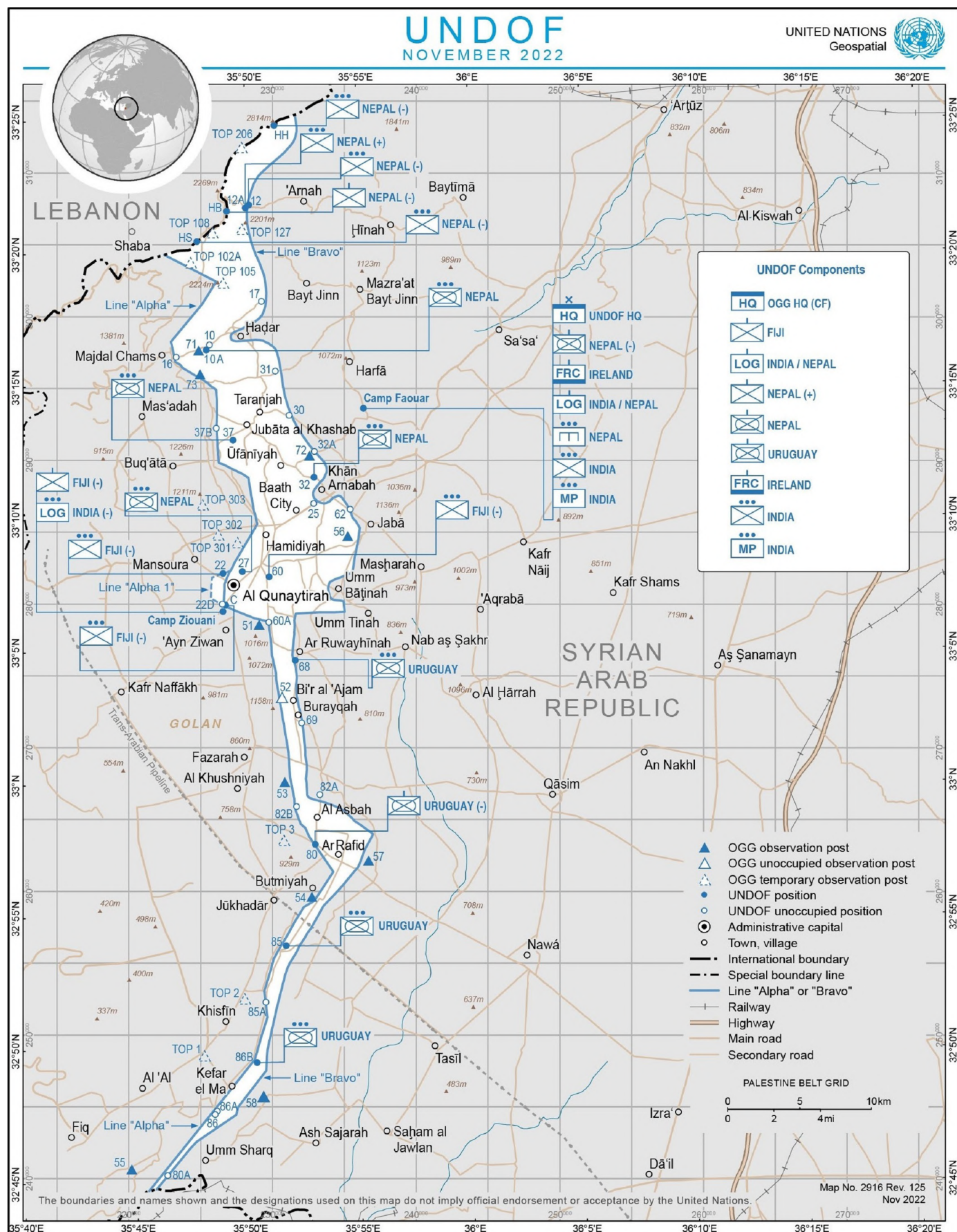
The views expressed are those of the author and do not necessarily reflect those of the United Nations. (ST/AI/189/Add.6/Rev.5).



Map 1. Source: see References.



Map 2. Source: see References.

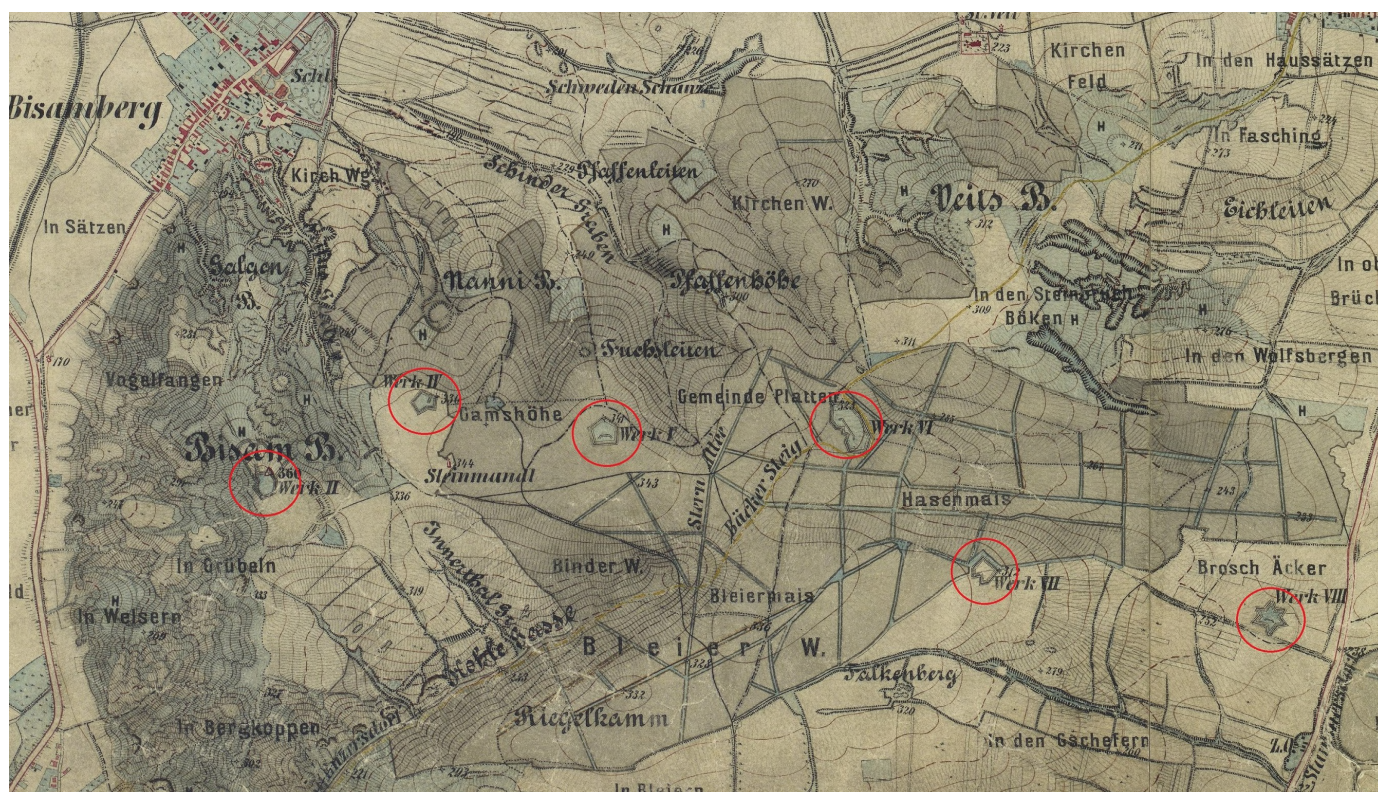


Map 3. UNDOF deployment map as of November 2022. Source: see References.

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Frits Wittgreffe - *Traces of a Rush Job*



Map 1. Fragment of *Aufnahmablatt 1:12 500, 4657-3a, Bisamberg westlich Korneuburg, Hagenbrunn, Enzersfeld*. The earthworks are circled. Grey-green: woodland; light sand: cropland; blue-grey: gardens, parks; blue-grey with letter H: grazing; red: buildings. The original colours were brighter, but the hand-coloured sheets have often faded over time. Source: Wikimedia Commons, Militärgeographisches Institut.

The northeast tip of the Alps is formed by a series of low hills across the Danube near Vienna. The first of these, the Bisamberg, served as a natural 'anchor' for a double line of earthworks hastily constructed to cover the northern approaches to Vienna at the outbreak of the 1866 war between Austria and Prussia. The lines, which apart from the Bisamberg ran through flat country, reached from the bank of the Danube below the steep west flank of the Bisamberg to the marshy Danube meanders of the Lobau and Freudenau, which gave Napoleon some trouble at the battles of Aspern and Deutsch Wagram. The local population was mobilised to help the soldiers complete the works. In total, fifty *Werke* (earthworks, fortifications) were built.

The lines were defended by about 5000 men and over 200 field guns. The Prussian troops however halted their advance a few kilometres to the

north, at the little Russbach stream, where they faced a far larger Austrian army under Field Marshal Archduke Albrecht. Apart from a few skirmishes among reconnaissance units there was no fighting: for the Austrians the war had already been lost at the Battle of Königgrätz on July 3. The month wasn't even out when the Austrian troops started evacuating the *Werke*.

Later role of the *Werke*

At the start of World War I, the earthworks were reactivated creating a bridgehead across the Danube to protect Vienna from a Russian invasion. But the Russians never got beyond the Carpathian Mountains. After the regulation of the river and the construction of a series of rail and road bridges, Vienna's districts north of the river had become important manufacturing locations. To protect this part of town, anti-aircraft guns

were installed in some earthworks during World War II. They do not appear to have played a role in the fighting between German and Soviet troops in April 1945, which was concentrated south of the river.

With the northward expansion of Vienna, many *Werke* disappeared, but most of those on the Bisamberg and immediately to the east still exist, though they are heavily overgrown (see photo on page 6). Some are now nature reserves where the earthen walls offer protection to ground squirrels and rare Pannonic flora from heavily mechanised agriculture.

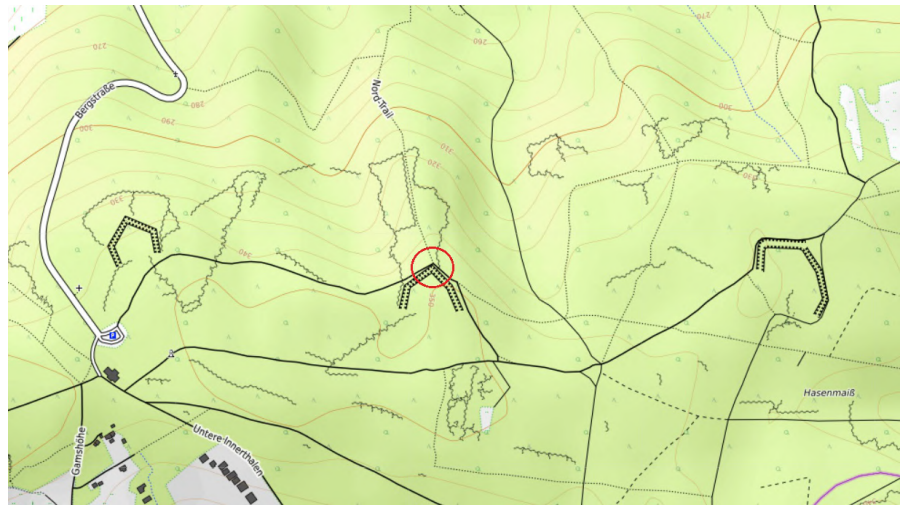
The *Werke* on the map

Map 1 shows a number of the *Werke* on a field survey sheet for the 1:12.500 map series for Vienna and surroundings of Austria's Third Military Survey, carried out between 1869 and 1887. On the Open Topo

Map of the area (Map 2), remnants of what was evidently a trench system can be seen near some of the earthworks. The dense vegetation is an obstacle to exploration. They probably date back to the World Wars, as the original earth works were isolated features. Some may be old erosion gullies, which are fairly common in this type of soil.

Several earthworks are completely surrounded by woodland on the 1873 map. The tree cover on that map, made seven years after the Austrian-Prussian war, roughly corresponds to the woodland shown on the (admittedly far sketchier) Second Military Survey made in the early 19th century. The fields of fire cleared around these *Werke* had been replanted, or a process of natural woodland regeneration was under way. Whatever the reason, it is clear that no further military use was planned. Natural regeneration was definitely a factor in obliterating parts of the trench network in more recent times.

Frits Wittgreffe holds a PhD in Physics from Leiden University, Netherlands. When not running a software solutions and hardware modules firm, he explores the hills around Vienna.



Map 2. Werke IV-VI on a present-day map, with remnants of a trench system. Circle: location of photo. Source: Open Topo Map.



Perimeter track, ditch and rampart of Werk V. Source: author.

Conti, Simonetta (ed) - *Storia Militare della Geografia, Quaderno SISM 2020*

The 2020 issue of the *Quaderni* yearbook series of the Società Italiana della Storia Militare (Italian Society for Military History), with twenty-seven articles totalling more than 600 pages, has been made available as a free download. The links between geography, cartography and military history are highlighted from various perspectives, ranging from geopolitics and avalanche mapping to air photography and the maps used at Waterloo. *'La géographie, ça sert d'abord à faire la guerre'* – geography in the first place serves to wage war, according to the French radical geographer Yves Lacoste. Geography (and with that cartography) has many other, more constructive purposes, but the present volume illustrates Lacoste's thesis in many ways.

Military cartography is the most prominent subject. Of the three contributions in English, Mirela Altic's 'Military Cartography of WWII' was published earlier in *The Cartographic Journal*, vol. 59, No. 4. It describes the joint efforts of the British and US map services to cover the Balkans, and the sheer complexity of that task. Over a dozen source map series were used, which meant dealing with different projections and mapping styles, unusual map scales and contour intervals, and garbled toponyms. Aerial photography to support mapping was patchy. The results were never put to the test; a comparison with the contemporary Soviet mapping of the region would be interesting.

'War and Cartography' by Jeremy Martin Black puts maps, their contents, production and use in the overall spatial context of the changing character of war. In actual combat at the local level, even the



best tactical maps cannot replace mental maps (an eye for terrain or what the German general and military theorist von Clausewitz called *Ortssinn*, location awareness). Black does not mention the sketch maps on scraps of paper used at the small unit level in these conditions, but they're thrown away and therefore easily overlooked. The mapping of the third dimension made an enormous leap with the introduction of radar and sonar.

While these were limited to locating targets over the short period needed to engage them, they foreshadowed GPS.

Emanuele Farrugi's "A farm too far" – Maps at Waterloo' covers much of the same ground as John Peaty's 'Waterloo and Maps' (*Maps and Surveys*, Autumn 2021). Farrugi does not discuss the confusion that inadequate maps may have caused among the French at the battle of Ligny, but according to her the

greater awareness of Blücher's staff - 'most of them... expert topographers' - of the shortcomings of the available maps played an important role in Blücher's regrouping at Wavre after Ligny, turning 'a rout into an orderly withdrawal that, ultimately, led to victory'.

The *lingua franca* of the maps in the yearbook is in most cases hard to read due to their low resolution. One exception is Giannantonio Scaglione's 'Rivoluzionario e celebrativo - L'Atlas della campagna del Tirolo (1800-1801)', on the atlas of manuscript and printed maps prepared for the commander of Napoleon's Army of the Grisons, which campaigned in the Alps. A comparison of the 1801 'reconnaissance' of the Splügen Pass on the Italian-Swiss border (p. 258) with maps of the area made a few decades later (see the Swiss Dufour and Austrian Second Military Survey maps on the Arcanum map website), shows how the immediate needs for visual information of an army on the march - depiction of roads, relief, woods and water courses - determine map content. This utilitarian military sketch, made in Alpine terrain under winter conditions, is at the same time a fine piece of graphic art.

Download link:

www.societaitalianastoriamilitare.org/quaderni/Quaderno SISM 2020.pdf

Paul Hesp

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.

Notice Board

Mapping and Survey – Enablers of Victory

In the Spring 2021 issue of *Maps and Surveys*, John Peaty discussed the 'going' map that helped to lead Rommel's troops astray during the 1942 Battle of Alam Halfa. In a special edition of the *Royal Engineers Journal*, August 2022, commemorating the 80th anniversary of Alamein, John's 'Mapping and Survey - Enablers of Victory' discusses the role of the survey and mapping effort in the Western Desert in much greater detail (pp 129-143). The article covers the context of map production and the role of aerial photography, the Germans' opinion of British maps and the compilation of 'block plots' showing locations of Axis artillery positions and defence works,

which contributed greatly to the artillery preparation for the Second Battle El Alamein. Access to the text is restricted to members of the Institution of Royal Engineers.

National Archives map reproductions

The online shop of the National Archives among many other things offers high-quality reproductions of maps. HMMG members might be particularly interested in D-Day maps, trench maps, bomb damage maps - and a 1944 Allied intelligence map of key buildings in Berlin. Charles Booth's *London Poverty Maps* deserves special mention: it is a beautifully produced volume about "the worst form of violence" (Ghandi) - poverty.