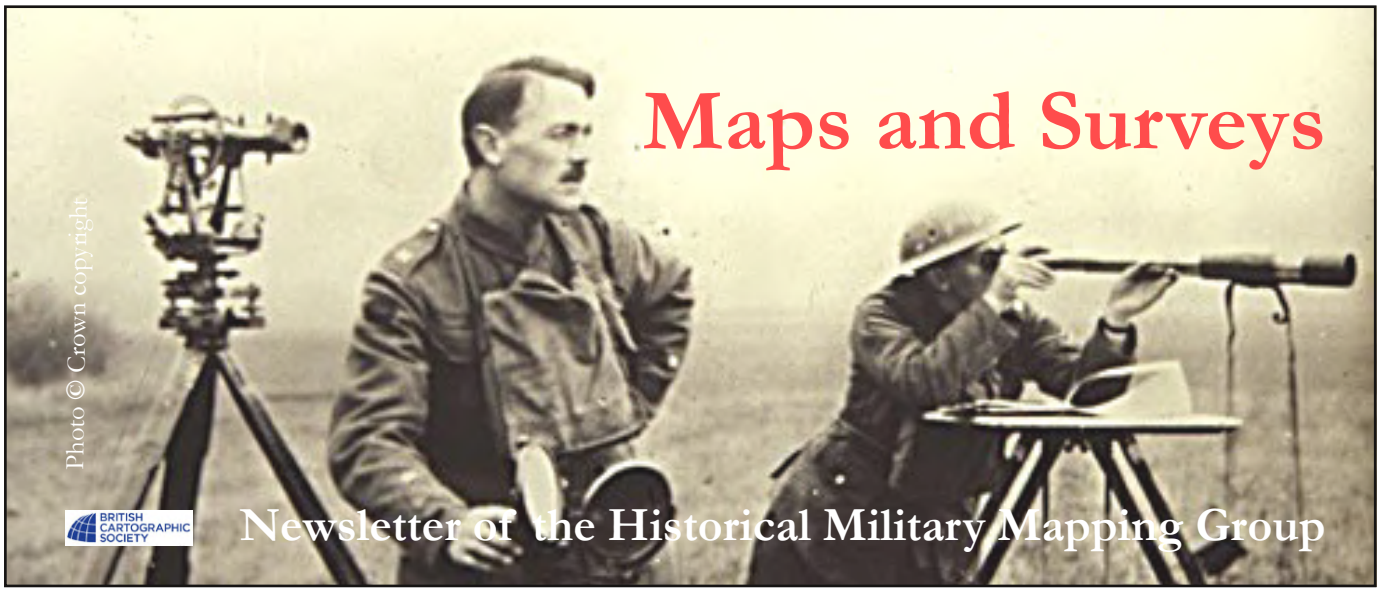


Maps and Surveys appears in spring, summer and autumn. The Newsletter welcomes contributions - please contact Liz Bourne, BCS Administration (*admin@cartography.org.uk*) for information. Editor: Paul Hesp (*Paul.Hesp@drei.at*).

Spring 2022

From the Editor

This issue starts with an overview of the HMMG and its recent activities by John Peaty, the Convener. My contribution has its roots in many long treks in Norway's mountains, where former Gunnerside team member and outdoorsman Claus Helberg was as familiar a character as Tom Weir in the Scottish Highlands. When exploring the outdoors in Austria, the 1:25,000 maps of the 1869-1887 Third Military Survey – see the Notice Board – are still a goldmine of topographic info. Do explore the connections between maps, your mind and your digital skills for future contributions!

AN 18TH CENTURY TACTICAL MAP. Fragment of sheet 7 of the 1:10,000 Norwegian kvadratmil *map, 1774. These maps, made when Sweden was still a potential enemy of Denmark-Norway, mainly covered Southeast Norway, the most likely area of armed confrontations. Sweden is to the south. The first bridge across the Svinesund was completed in 1946. Source: Kartverket (Norges Geografiske Oppmåling).*

John Peaty - THE HMMG AND RECENT ACTIVITIES

Historical Military Mapping Group (HMMG)

The HMMG is one of the BCS's Special Interest Groups (SIGs). Membership is open and free to all BCS members. The group provides a contact point and a discussion forum for those interested in or engaged in research into any aspect of the history of military survey and mapping. Ideas for events and activities from members are very welcome.

The group was without its Newsletter (Maps & Surveys) for some time. However, under the Editorship of Paul Hesp the Newsletter was relaunched in November 2021. The post of Secretary is currently vacant.

Highlights of the group's activities in recent years prior to the pandemic include:

* April 2014: visit to Lincolnshire to study mapping and charting for the Bomber Offensive, visiting serving and former RAF airfields.

* November 2014: visit to the British Library for a lecture on survey and mapping during the Great War by Dr Peter Chasseaud FRGS (who founded the group).

* September 2015: joint workshop with the Map Curators Group (with whom it shares many members and interests) in York on the development of British military mapping over the past century.

* August 2016: visit to RAF Northolt, including to the Air Historical Branch.

The group enjoys a close relationship with the Charles Close Society, Defence Surveyors Association and others. Following the conclusion of the Memorandum of Understanding between the BCS and the CCS last year, it is hoped to conclude a MOU between the BCS and the DSA this year.

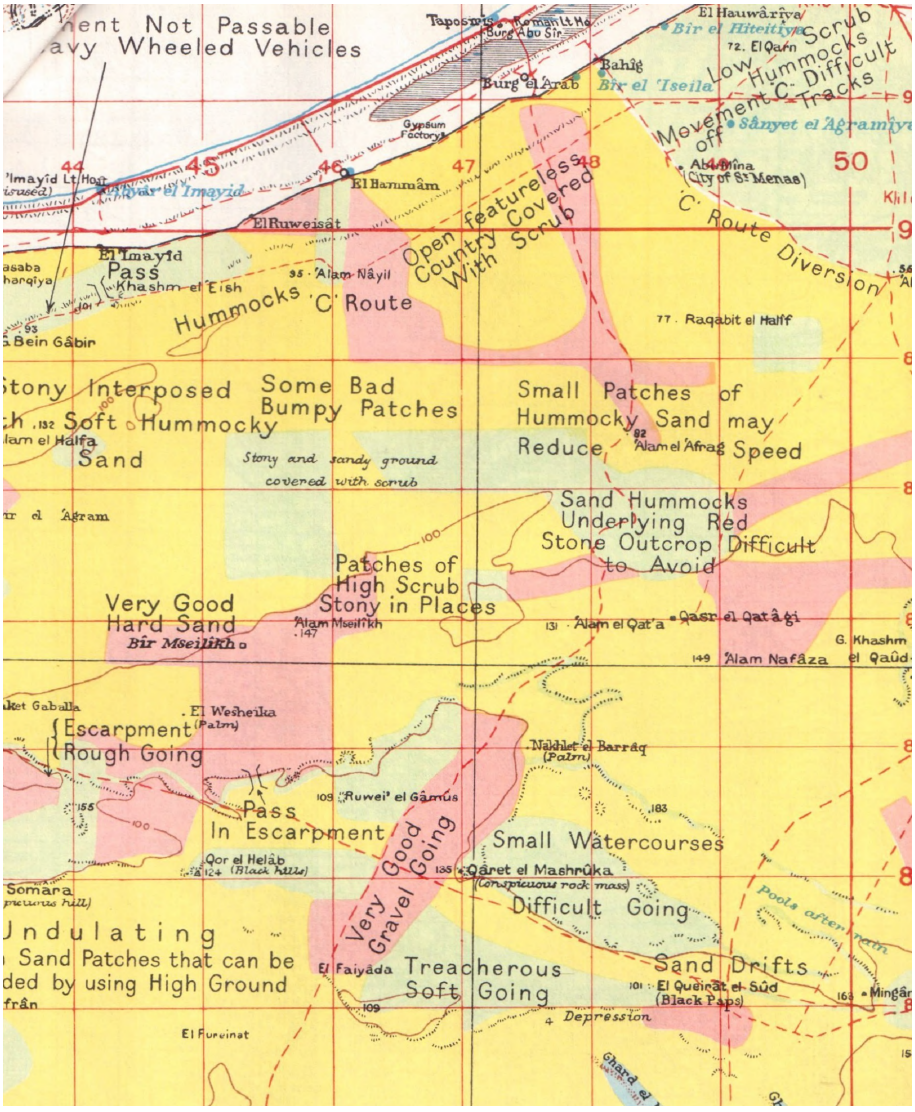
HMMG-CCS joint event

Following the signing of a Memorandum of Understanding between the BCS and the Charles Close Society (which is dedicated to studying the history of the Ordnance Survey), on Wednesday 8th September 2021 the HMMG and CCS held a joint webinar as part of the BCS's annual symposium.

Two speakers were provided by the BCS and two by the CCS. Dr Richard Oliver (CCS) spoke on the influence (or otherwise) of geology on the Ordnance Survey. Dr Rob Wheeler (CCS) spoke on the Ordnance Survey's worst decision: the publication of the 25" map by parishes. Chris Going (BCS) spoke on the night maps used by the Luftwaffe to bomb the UK during World War II. Dr John Peaty (BCS) spoke on the production and use of "going" maps by Commonwealth forces in the desert campaign during World War II, including a false one which was planted on the Afrika Korps and is said to have fooled Rommel during the battle of Alam Halfa.

All the presentations were well received and generated a lot of questions and discussion.

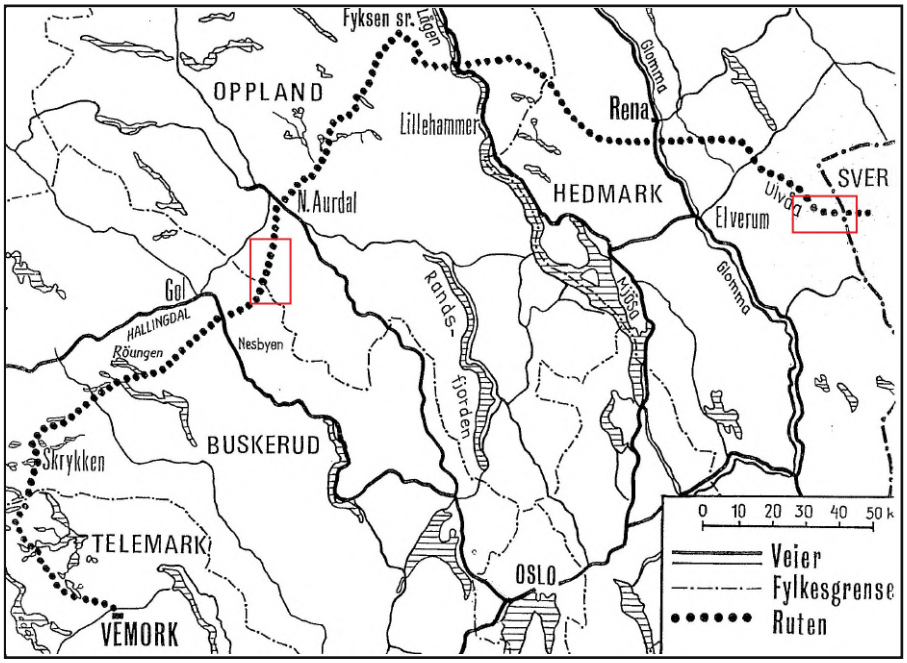
British "going" map of an area just west of the Nile Delta (Egypt 1:500,000 Sheet 2 [Cairo]). Collection John Peaty.



Paul Hesp - FINDING THE WAY ON A WINTER HOLIDAY
Two Norwegian Escape Maps

Allied fears that Nazi Germany would be able to produce nuclear weapons led to several plans to destroy the Norsk Hydro plant at Vemork in occupied Norway, the Germans' single source of an essential input: heavy water. It was located in a deep valley at the southeastern edge of the vast, inhospitable Hardangervidda plateau. The method chosen for putting the plant out of action was to drop a team of saboteurs which would then escape across the largely unguarded border with neutral Sweden, some 200 k. away as the crow flies and a multiple of that distance in reality, through country with river valleys and ridges up to 1,000 m. high running across any route; inhabited places had to be avoided as well.

The first attempt, by specially trained Royal Engineers who would land on the plateau in two gliders towed by bombers, was a disaster: the gliders never got there and all soldiers were killed. Their Norwegian support team stayed put on the Hardangervidda, and on 16 February 1943 a team of six Norwegian SOE agents led by 23-year old *fenrik* (2nd lieutenant) Joachim Rønneberg was dropped there (Operation Gunnerside). Their obvious advantage was familiarity with the country, not least the upland areas where all had over many years developed superb outdoor skills in all seasons. To them, the Hardangervidda was what the Cairngorms are to a British hillwalker.



Map1. Sketch map of the escape route (dotted line) from Vemork. Rectangles: location of maps 2 and 3. Source: Rønneberg 1970, p. 17.

'An unusual winter holiday'

After sheltering for a snowstorm in a deserted cabin for a number of days, the demolition team linked up with the support team and attacked the plant on 28 February, destroying its equipment. Not a shot was fired. The SOE men headed back up the plateau to avoid the massive search launched by Germans. One of the demolition team then joined the support team for further work in Norway while the others headed for Sweden, making an enormous detour to the border (Map 1).

The route avoided inhabited areas as much as possible, but summer farms and mountain cabins dotted the landscape. Usually deserted in winter, these could be used for overnight stops – only sleeping bags were carried. They were often a welcome source of dry and tinned food as well: the SOE men essentially lived out of their rucksacks, abandoning a toboggan for supplies on the way to improve mobility.

The border was crossed on 18th March. The resistance ran a number of escape routes in the area, but according to Rønneberg's after-action report for SOE the team relied on a compass course for the last lap through wild evergreen forest. At border marker 106 the men shook hands and said "takk for turen" (thanks for the trip), as you would after a day's walking or skiing. The 'unusual winter holiday' - the title of an article on the escape Rønneberg wrote in 1970 - was over. According to the after-action report the total distance covered on ski was about 700 k.

Rectangles and graticules

The Norwegian maps that were available to the Gunnerside team for route finding make their accomplishments even more impressive. They were of two types: the *gradteigskart* and, for the last few days, the *rektangelkart*.

The *rektangelkart*, which covered a rectangular area of 3 x 4 old Norwegian miles (about 34 x 45 k.) at scale 1:100,000, was published from the 1860s onwards. The map projection used resulted in serious distortions as distance to the central

meridian increased. While work on the *rektangelkart* was still underway, its shortcomings led to the introduction of the *gradteigskart* (graticule map) in the 1890s. Each sheet, again at 1:100,000, covered 20' of a parallel by 30' of a meridian; in the north, because of meridian convergence, the size was 20'x1°.

Maps 2 and 3 show how landscape is represented on both map types. Scale and a contour interval of 30 m. create a rather 'generalised' picture. But as outdoor people, the Gunnerside team had never had anything better at their disposal; they took the maps' shortcomings in their stride. Deep snow obliterated minor landscape elements anyway. Slow map revision (some of the sheets were over half a century old) was no problem either, as remote areas saw little change. But in dense forest the team generally preferred to move on a compass course.

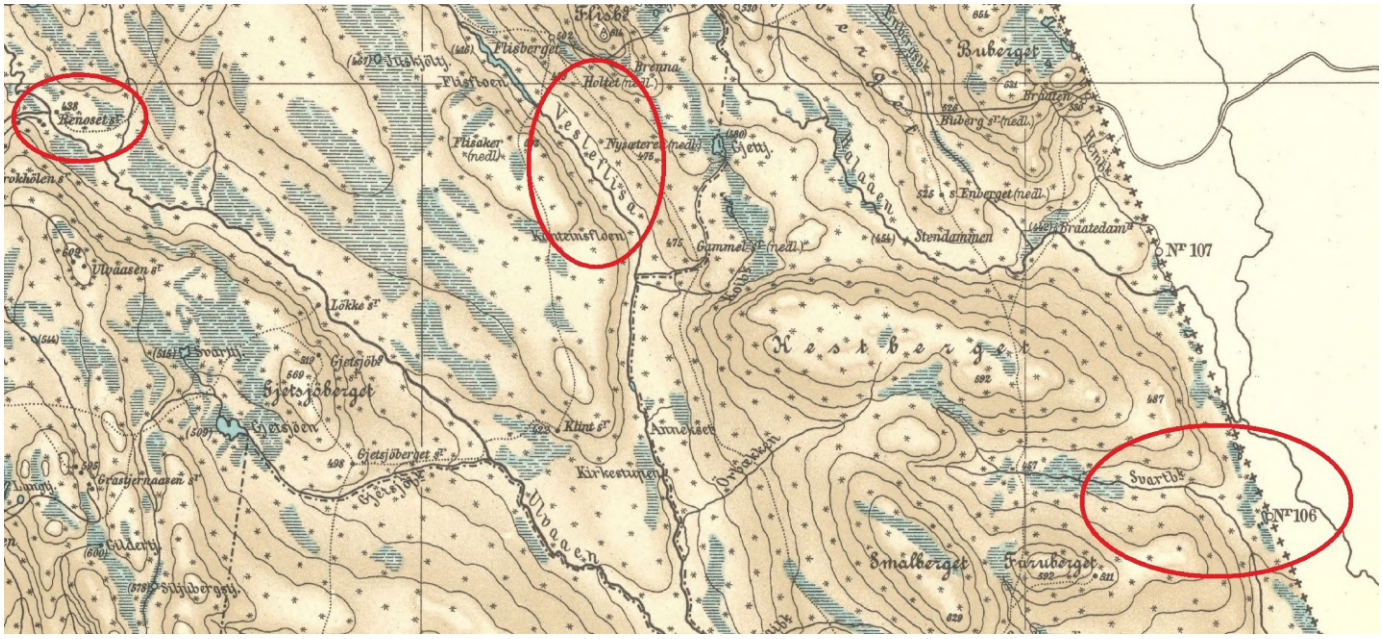
Norway was never completely covered by these maps. Climate and terrain were a major challenge for field work, money was tight before oil and mapping of the land area (over 380,000 sq. km. including Svalbard) competed for funds with coastal and hydrographic mapping, which were also of vital importance. Both maps were replaced from the 1950s onwards by the M711 series of 1:50,000 UTM-based maps, produced with US support after Norway joined NATO. This was the first large-scale map to cover the whole country.

Two escape map examples

Both the Germans and the Allies used the *rektangelkart* and the *gradteigskar*t. The Gunnerside team carried maps reprinted by the Geographical Section of the (British) General Staff, which were often of poor quality. As Rønneberg's report contains a route summary with map numbers, the originals on which the British maps were based can easily be found on the website of Kartverket, the Norwegian Mapping Authority. Maps 2 and 3 are fragments of a map from each series. These indicate that a high level of orientation and map reading skills, terrain knowledge and discretion was required of the team. Locations mentioned in the route summary are circled in red. The quotations accompanying the maps are from Rønneberg's report.

Map 2. Fragment of gradteigskart *F 32 Vest Aurdal, 1930. Source: Kartverket (Norges Geografiske Oppmåling). Blue with dashes: marsh; 'asterisks': evergreen forest; Sr (sæter), stöl: summer farm.*

(8.3.43) "Despite the fact that this district is broken up by small hills and valleys, we had little difficulty in finding our way... It was now blowing hard and the temperature was many degrees below zero. We... passed BJAADALENSETER. Much of the top snow had now been blown off, leaving bare ice which was very hard on our skis. When we reached FJELLSTØLEN… it was extremely cold, and blowing hard, though clear. We spent the night in a snug seter farmhouse, well stocked with flour and bannock bread, where we were able to dry our boots and our clothes."



Map 3. Fragment of rektangelkart *26 D Söndre Osen, 1899, revised in 1930. Source: Kartverket (Norges Geografiske Oppmåling). Blue with dashes: marsh; 'asterisks': evergreen forest; Sr (sæter), stöl: summer farm.*

(18.3.43) "… We steered by compass over wide marshland to VESLE-FLISA. The heavy going necessitated our making a halt in the middle of the day… From VESLE-FLISA we steered by compass for No. 106 FRONTIER BEACON. It was dreadful broken and stony country, through scrub and thick woods, with no visibility… At 2015 hours we crossed the Swedish frontier to the great satisfaction of us all. We made camp a few kilometres from the frontier and for the first time… permitted ourselves to make an open fire."

Sources

Harsson, Bjørn Geir, and Roald Aanrud, *Med kart skall landet bygges – Oppmåling og kartlegging av Norge 1773-2016*, Ringerike 2016.

https://kartverket.no/Kart/Historiske-kart/. Norwegian text only. The search can be refined by map type, publication year and (former) county; maps can also be located on the overview maps on https://www.kartverket.no/om-kartverket/historie/historisk-arkiv.

Operation "Gunnerside" – Fenrik Rønneberg's Report, http://forsvaretsmuseer.no/Media/Files/Rapport-fra-1943-av-fenrik-Joachim-Roenneberg (in English).

Rønneberg, Joachim, 'En uvanlig vinterferie', *Den Norske Turistforenings Årbok 1970*, Oslo, p. 16-25.

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Notice Board

More escape maps

Left: the Algerian/Tunisian border area, based on a Bartholomew map. See Dianne Rutherford on British, American and Australian escape and evasion maps at https://www.awm.gov.au/articles/blog/second-world-war-escape-and-evasion-maps.

An empire at 1:25,000

Between 1869 and 1887, the Imperial and Royal Institute for Military Geography mapped the whole Austrian-Hungarian empire - about 700,000 sq km - at 1:25,000 (Vienna and surroundings at 1:12,500) with great precision. Full overview of the 'Third Military Survey' on the Arcanum website (https://maps.arcanum.com/en/map/thirdsurvey25000). Free high-res downloads of the fair drawings:
*https://commons.wikimedia.org/wiki/Category:Franzisco-Josephinische_Landesaufnahme,_Aufnahmeblätter (mainly eastern Austria);
*https://commons.wikimedia.org/wiki/Category:Franzisco-Josephinische_Landesaufnahme,_Aufnahmeblätter_1:12.500.
The sheets for eastern Austria contain tables showing how many men and horses could be quartered in a village (accommodation categories: 'comfortable' and 'packed').