

Jan Smits

# The topographic record of the Netherlands 1800-1992 for sale

(with additions, 2016)

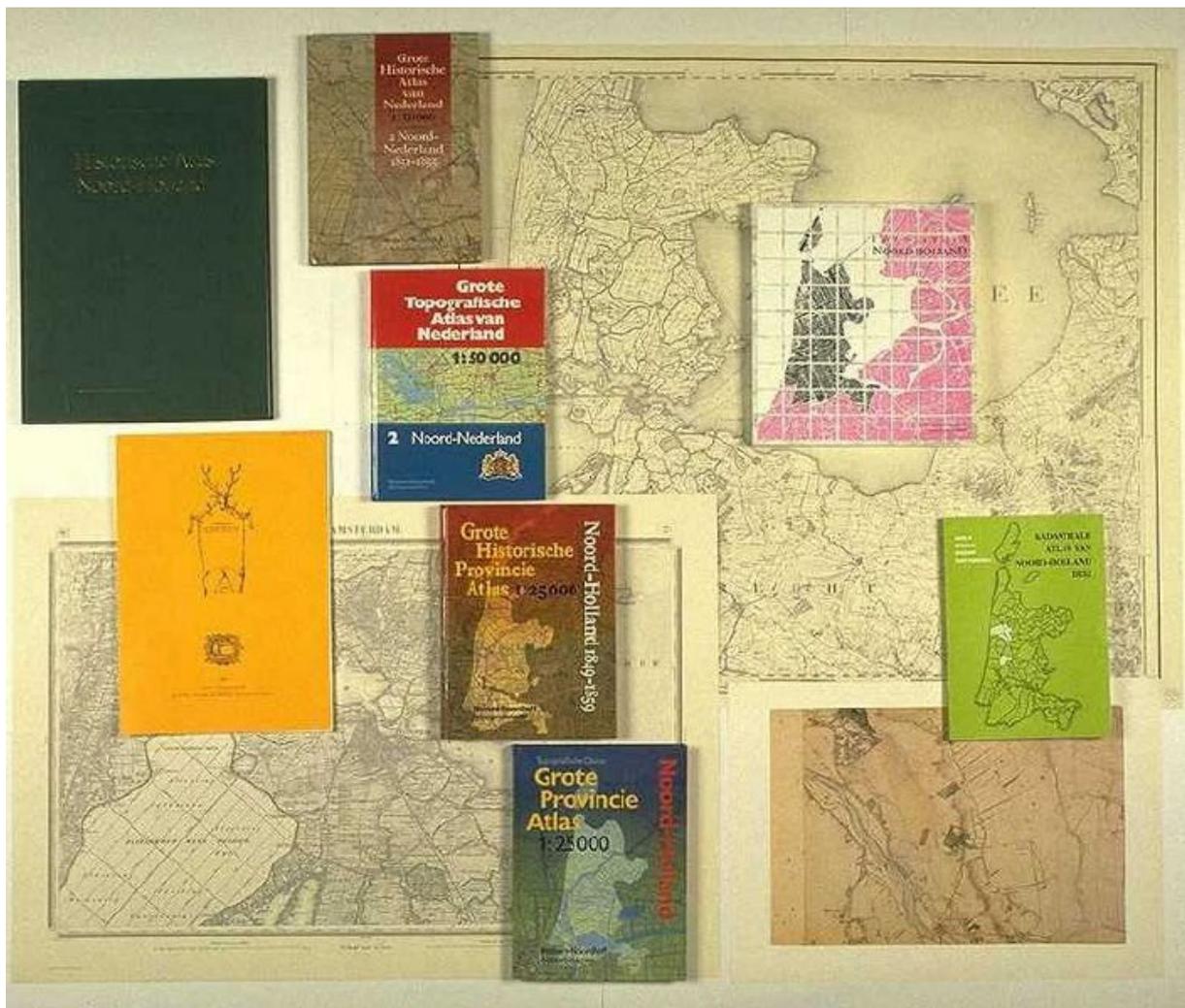


Photo 1. Series of topographical facsimiles

**Jan Smits, Koninklijke Bibliotheek, Den Haag, The Netherlands - 1993 Ligue des Bibliothèques Européennes de Recherche, Groupe des Cartothécaires de LIBER**

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And you, my mountain,  
Will you never walk toward me?

epigraph from Kevork Emin

(In: Anthology of Armenian poetry / Diana der Hovanessian and Marzbed Margossian. -- New York : Columbia University Press, 1978)

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## Abstract

Though the Netherlands have been mapped on large scales before 1800 the resulting maps never covered the whole country. Large-scale mapping really started after the beginning of the 19th century. The maps were meant for military use, though civilians always fancied them. Since 1970 all large-scale topographic mapping since 1800 has been made available to the general public in facsimiles or as atlases. The question is: How is it possible that these large scale facsimiles and atlases are sold by the hundreds of thousands in The Netherlands? Can it be that this is because the Netherlands is a densely populated country, because there is a cultural-historical hausse and because of the use of the right marketing techniques!

Anyway, with these atlases map-departments can easily fulfil their needs for basic topographic information, old and new. But the biggest advantages are the availability of toponymic indexes and the possibility to compare easily topographic situations chronologically.

## Introduction

Though topographic surveys have taken place before 1800 we never can be sure whether they are geodetically correct, even when they were surveyed for military purposes. And even when they were not too bad they are either on too small a scale or of too small an area. Before 1800 The Netherlands were never totally surveyed on a large scale and these surveys were never based on a single triangulation network covering the whole country. But since 1800 many large scale surveys have taken place of which the one between 1834 and 1859 was the first complete one on the scale 1:25,000. Since then the countryside has changed drastically in respect of human occupation, landuse and natural components. This means also that many editions of the topographic maps have been produced, some only for military use, some both for military and civilian use. The combination of all these editions forms an enormous amount of topographic data.

For the researcher there are not many places where he can find this "mountain" of data in one piece -with the possible exception of the Topografische Dienst (Topographic Service of the Netherlands, TDN) or the General States Archives- which makes this "mountain" hard to access or to climb.

But now, contrary to all belief, the mountain seems to have come to us, at least its bigger part. Thanks to initiatives taken by individuals, TDN, the General States Archives and the will of publishers to accommodate their clients wishes facsimiles or new, handy editions of modern maps have been published. The mountain also shows new vistas as most facsimiles/new editions have had added something of their own to the original to enrich their use, as e.g. explanatory texts, toponymic indexes or the sheer fact of oversight.

## 1. History of the mapping of The Netherlands.

But let's first have a synoptic look at the surveying of The Netherlands and at some of the characteristics of the resulting maps.

From the first quarter of the 16th century onwards general topographical maps for the whole of the country (the Netherlands and Belgium) are known. Jacob van Deventer (1505-1575) was the first 'geographer' who surveyed the country by province in a uniform manner, applying triangulation. All 5 maps are on the scale ca. 1:180,000. The order for the mapping had been given by the States in Brussels. When Van Deventer's maps had to be revised Christiaan 'sGrooten (152?-1603/8) was commissioned by Philips II of Spain to survey the country again. He produced a.o. the 'Brussels Atlas' (1573) and the 'Madrid Atlas' (1595), which contain a.o. a map on the scale ca. 1:400,000 and one map on the scale ca. 1:230,000. Three parts of the first map and 8 parts of the second cover the Netherlands and part of Belgium.

However when the central authority of the Habsburgers broke down surveying and mapping became the concern of the separate provinces. From then onwards no homogeneous map of the Netherlands on middle scales has been produced up till the 19th century.

At the end of the 18th century some topographic surveys have taken place on the scale 1:14,400 (See: Index sheet 5 of Koeman's 'Guide to the study of topographical mapping in The Netherlands 1750-1850', which lists 12 maps on this scale), which in 1796 were continued by the Batavian Republic. These were partly used for the Krayenhoff-map 1:115,200.

The first order for an extensive topographical survey and mapping was not of a military nature. The Executive Committee of the Batavian Republic (the first centralized state since the independence of the Netherlands) in 1798 installed a committee for the mapping of the territory which could be used to show the new administrative organisation. This was because the mapping of the Netherlands then consisted of a multitude of regional maps, greatly varying in scale, execution and reliability. The map was to be produced by C.R.T. Baron Krayenhoff (1758-1840). In 1806 a 'Depot-Général de la Guerre' was founded, of which Krayenhoff became the director. In 1809 he was promoted to 'Minister of War', but he resigned in 1810 when The Netherlands were annexed by France. However he was appointed Inspector-general of the Corps of Engineers. When he impressed Napoleon with his fortifications of Amsterdam he was ordered to Paris as an advisor. Here he wrote his report about triangulation, published in 1815 and improved and reprinted in 1827 called: 'Précis historique des opérations géodesiques et astronomiques faites en Hollande; pour servir de base à la topographie de cet état.' In spite of his many functions he did a lot of the triangulation-measurements himself! The network was connected with the French triangulation by Jean Baptiste Joseph Delambre (1749-1822), thereby providing a link between the French and Danish triangulation networks. (21) On the title-page of the Krayenhoff-map the first order trigonometrical-points are given. His triangulation-network was replaced between 1866 and 1928, though later measurements showed that his work was more precise than expected. (7) The resulting map was published between 1810 and 1823 and reprinted in 1829. When it appeared to be impossible in the 1820's for the various Dutch surveying services to cooperate, the Cadastral Survey mapped the whole country, but published them province by province on the scales 1:25,000-1:80,000. Till 1830 the Military Survey produced a manuscript field atlas, which at the end contained 87 sheets 1:25,000 of the Belgian territory and 180 sheets 1:10,000 and 1:40,000 of the present Dutch territory.

When Belgium seceded after 1830 the lack of a good topographic map in the Netherlands was felt. The officers of the General Staff were commissioned to make a topographic map which not only depicted the most important "topographic details, but also the nature, condition and vegetation of the grounds, the different overland- and water routes, the slope of the terrain etc. When in 1839 two southern provinces were surveyed for the greater part on the scale 1:25,000 King Willem II was so satisfied with the result he ordered the rest of the country to be mapped in the same way. The survey was finished in 1859. The geodetic base was formed by the triangulation-network of Krayenhoff, but this was complemented by a secondary triangulation-network (completed in 1855) as the earlier one was too gross. The projection was that of the French cartographer Rigobert Bonne (1727-1795). The field documents on the scale 1:25,000 then were reduced and lithographed on the scale 1:50,000 by the 'Topografisch Bureau' and its successors, forerunners of the present Dutch Topographic Survey (TDN). In 1864 the 'Topographic and Military map of the Kingdom of The Netherlands' (TMK) was ready, but printed only in black. The sheet-index for the TMK had already been created between 1822-1827 for a non-executed plan for a 1:50,000 map. The TMK was used as base-map for the geological map 1:200,000 (1858-1867), the 'Topographic atlas of the Kingdom of The Netherlands 1:200,000' (published 1870) and the Waterstaatskaart (Water Management Map) 1:50,000 (1st edition 1864-1890).

When the TMK was finished in 1864 it was decided to update the sheets along certain defense-lines (IJssel-river, Tielerwaard, Bommelerwaard and the Meijerij) on the scale 1:25,000. From these so called 'strookkaarten' (strip-maps) came the 776 sheet series 'Chromo-Topografische kaart 1:25,000' with a map-size of 40 x 25 cm. They were produced in the same way as the 1:50,000 series, except that they were printed in colour. Like the 1:50,000 they used the projection of Bonne.

For reproduction one used the technique of lithography, which was improved by or under the direction of C.A. Eckstein, since 1878 director of the 'Topografisch Bureau' (former TDN).

Reliable height-measurements were only available from 1894 onwards. The surveys were mainly done in the field, though since 1932 experiments with aerial photographs were made.

Both 1:25,000 and 1:50,000 were printed in colour since 1885 (16b). Pastel-colours were used to depict built-up areas, roads, waterways and landuse. In the maps line- and point-symbols can be discerned, a.o.: roads, buildings (wooden or iron/glass/stone), towers, triangulation-stones, bridges, gauges, steam-driven pumping-station, windmills, oilpumping stations, dikes, locks etc., and isolines for height (of which the interval changes with the relief-energy) and depth, and area symbols like water, landuse-classes, forests, sands etc.

Since 1932, with the implementation of aerial photography, a stereographic projection replaced the former Bonne projection. In the 1920's the Van Roon Commission had evaluated the use of the Bonne-projection. Though the geodetic base for a single sheet didn't show too many divergences the sheets did not fit very well together. This problem was alleviated with the new projection. The sheet-size was enlarged to be able to print the legend next to the right hand side of the map, later underneath the map. (2)

After many discussions, even with the Prime Minister (the famous photogrammetrist prof.dr. W. Schermerhorn) after WW II, a 1:10,000 map series was produced between 1951 and 1961, comprising 649 sheets, with a map-size of 100 x 62,5 cm. It is mainly a working map used as background for culture/technical works, planning, and as base map for geographical, geological and geomorphological research. The sheets have the same numbering as the 1:25,000, but are sub-divided into a North and a South sheet each. They are also reduced to 1:25,000 which gave a perfect

guide key for the rest of the cartographic process on the 1:25,000 series. This reduced map also served as base-map for the generalization of the 1:50,000 series.

The 1:25,000 and 1:50,000 maps were produced with different technical processes between 1866 and 1951. Since 1951 the maps are produced in 2 editions: one with an UTM-network for military use and one with the Dutch national grid for civilian use (on which till 1962 landmarks of military importance were filled in with fantasy sketches!).

In 1954 The TDN was commissioned by the Ministry of Agriculture, State Planning Service and Central Statistical Office to produce a 1:10.000 landuse map. Since 1977 this map is produced in-house by the Central Statistical Office.

In the 1950's a 1:10,000 height map was produced in cooperation with the Survey Department of the Rijkswaterstaat. This map is available as diazo-print.

Since 1981 in a tri-annual cycle aerial photographs are taken on the scale 1:18,000 by private firms and coordinated by the TDN. These are used by the Ministries of Finances and of the Interior to calculate the building-volume within municipalities (from these municipal building volumes the amount of finances is calculated which the municipalities will get from the national government). However the same pictures are also used as basis for the topographic maps.

The TDN started in 1981 with the digital production of the 1:250,000 series, soon to be followed by the 1:50,000 series. For both maps there is also a edition for planning purposes, printed in grey.

To get a true insight into the technical changes and processes used with the TDN since 1814 one should read the article by Ir. L. van Zuijlen, former vice-director of the TDN, published in a special 1990 issue of the *Kartografisch Tijdschrift*. (16b) Unfortunately this article is only available in Dutch.

To relate the contents of the 1:25,000 with other European series a scheme of Picket of 1972 is here reproduced. He discerns the following types (4):

The Belgian type: this shows, more than other maps, a continuing topographic spectrum, especially for the built-up areas and the orography

The Dutch type: a rather broad topographic spectrum with the exception of the built-up areas.

The German type: a rather broad topographic spectrum for land covering (vegetation) and orography.

The Italian type: Accentuation of height in a remarkable small topographic spectrum for built-up areas and land cover.

The Swiss type: An excellent depiction of height and relief, but otherwise a small topographic spectrum for other items.

Comparing the degree of generalization on topographic maps between 16 (mainly) western European countries J.J. Krijnders came to the following conclusion: "We can discern three groups of countries:

- Austria, Germany and Spain, which generalize not very much. For Spain this isn't curious as the 1:50,000 map of the IGN is a reduction of the 1:25,000 map (as the map of the Instituto Geographico Militar is not directly available);
- Great-Britain, Portugal, Sweden, Norway and especially Ireland, which generalize very much;

- Belgium, France, Denmark, Switzerland, The Netherlands, Italy and Finland which are in between".  
(16e)

|                            | buildings | roads | vegetation | orography | hydrography |
|----------------------------|-----------|-------|------------|-----------|-------------|
| <b>I Belgium</b>           | ****      | ***   | **         | ****      | **          |
| <b>II Netherlands</b>      | *         | ****  | **         | **        | **          |
| <b>III Germany/Denmark</b> | *         | *     | **         | **        | **          |
| <b>IV Italy</b>            | *         | *     | **         | **        | **          |
| <b>V Switzerland</b>       | *         | *     | *          | *****     | *           |

*Table of spectrum-classes of 5 European topographical maps 1:25,000*

*(from: J. Piket: Vijf Europese topografische kaarten, 4)*

## 2. Usage and demand for topographic maps up to 1985

The TMK and the 'Chromo-Topografische kaart 1:25.000' were originally meant for military use in wars and seemed to be kept under vigilant secrecy until 1887. However that is not totally true. The present Director of the TDN noted that the TMK of 1864 was a military operation, but the maps were mainly sold to private people. Until 1887 it seems to have been rather troublesome for army-officers to get hold of a copy of the maps! And till 1923 a very tedious, intricate procedure was introduced to order copies. When the TDN opened a special office for map-distribution part of this trouble was solved for civilians. Since WW II the TDN tries to make the production of civilian maps self-sufficient. Fortunately the TDN has been able to keep the maps reasonably priced. (16a) The advent of the atlases may help them to keep producing for the civilian market.

Non-military use of topographic maps is tentatively described by N.J. Bakker of the TDN. He produced the following table to indicate the kind of non-military use concluding that of total production 50 % is taken up for professional use (maybe better indicated as "institutional use") and 50 % for private use, though part of the latter may also be for professional use.:

Orders and bought maps after user-category, january/february 1990

| user                                 | orders | amount of maps taken |
|--------------------------------------|--------|----------------------|
| State/province/municipality agencies | 12 %   | 16 %                 |
| utilities                            | 2 %    | 4 %                  |
| other government agencies            | 7 %    | 7 %                  |
| private companies                    | 23 %   | 26 %                 |
| bookshops (incl. tourist office)     | 14 %   | 35 %                 |
| private persons                      | 42 %   | 12 %                 |

The next table (also of N.J. Bakker) might even be of more interest, but dates from 1979 and may now show different figures:

The use of different maps after user-categories

| user-category         | 1:25,000 | 1:50,000 | 1:10,000 | other  | number  | %     |
|-----------------------|----------|----------|----------|--------|---------|-------|
| state                 | 15,8 %   | 14,5 %   | 20,5 %   | 6,2 %  | 22,143  | 14,6  |
| provinces             | 8,1 %    | 5,3 %    | 4,8 %    | 0,7 %  | 9,570   | 6,3   |
| municipalitie         | 4,8 %    | 3,0 %    | 6,5 %    | 1,7 %  | 6,138   | 4,1   |
| utilities             | 2,6 %    | 1,2 %    | 6,3 %    | 0,4 %  | 3,215   | 2,1   |
| other government org. | 5,2 %    | 3,1 %    | 6,7 %    | 0,7 %  | 6,343   | 4,2   |
| architects            | 0,8 %    | 0,4 %    | 1,5 %    | 0,2 %  | 1,020   | 0,7   |
| big companies & inst. | 10,4 %   | 12,1 %   | 10,3 %   | 17,9 % | 17,728  | 11,7  |
| other private users   | 52,4 %   | 60,3 %   | 43,5 %   | 72,3 % | 85,341  | 56,3  |
| amounts per type      | 83,664   | 44,146   | 7,777    | 15,911 | 151,498 | 100,0 |

The one but last column gives the total amount of maps sold per user-category, the last the division in %.

Bakker further discerns between certain categories of use (general orientation, navigation and route-planning, earth science research and mapping, cultural-historical research and mapping, landscape research, planning, country planning and land development projects, thematic inventories, recreation, education, armchair-use) (16d). One may conclude from this that topographic maps are so much used as base-map or primary research-tool, and are published in so many reports and scientific and educational publications that they permeate society.

In the 1971-catalogue of the exhibition '400 jaar atlas' (400 years of atlases) Cor Koeman wrote in the introduction: "Do we still need atlases and maps today?" (3) Though his contemplation that progressing automation may lead to the stage that the map becomes more or less obsolete is still valid, that age has not been reached yet, at least not in popular cartography. He questions a.o. the lack of uniformity in scale in atlases through the ages, remarking that the International Map 1:1,000,000 and 1:2,500,000 may have uniform scales, but are not really atlases. The present output of uniform, topographic atlases in The Netherlands would have pleased him.

In 1972 Jan Piket typified the users of topographic maps as 'the masses'. Contrary to the users of e.g. geological maps or school-atlases no special group of users could be identified in relation to topographic maps. They could be military or scouting, scientific researcher or tourist, teacher or student (4). The need for topographic maps (older and new ones) could also have been a result of the fact that people in general became conscious of ecology- and landscape-problems.

In an article of 1987 Marijn Bosma identified as the cause for the rise in sales the new lust for large scale topographic information and the rise of the number of special map-shops. At the time only a specially produced 1:100,000 topographic map was available and according to him there was a big demand for the true connoisseurs of large scale information. (11)

According to Günther Schilder in his article 'The History of Cartography: quo vadis?' (15) one has come to the point of view that 19th century topographic maps of The Netherlands give an unsurpassed insight into landuse, habitation and the form of landscapes, especially from the period before the rapid population growth and industrialization (ca. 1880). As not much of the former landscape is unmarred, one needs older maps to restore them to their former beauty. As the topographic maps of the TDN and its forerunners were produced as independent documents and as they are well documented they do not suffer the restrictions of many older maps of which the original purpose may have been lost through the separation of the map and the document(s) it belonged to, thereby preventing for the bigger part misinterpretations.

Before we look at the present hausse of atlas-publishing I'll first parade some earlier or related projects.

Most chapters which follow are headed by the title of the facsimile, [original year of mapping or publication], place of publication, publishers, and year of publication.

### 3. Facsimile editions of cadastral and early topographic maps

#### 3.1. Facsimiles of cadastral atlases 1816-1831

The Land Registry Office was introduced in The Netherlands by the French in 1811. During the years 1811-1831 10 to 17,000 cadastral plans were made of the whole country -each municipality with its own triangulation-network- on scales 1:250, 1:2,500 and 1:5,000, each according to the characteristics of the area mapped. The main purpose was to be able to levy land-taxes, but also to create a system of legal security concerning proprietary rights and other rights on real estate (2). The present land-registry system is still based on the 1811-1832 situation. As with the early 19th century topographic maps they give an excellent image of the situation before the big spatial changes of the second half of the 19th century, because they combine a very detailed map-image with an extensive

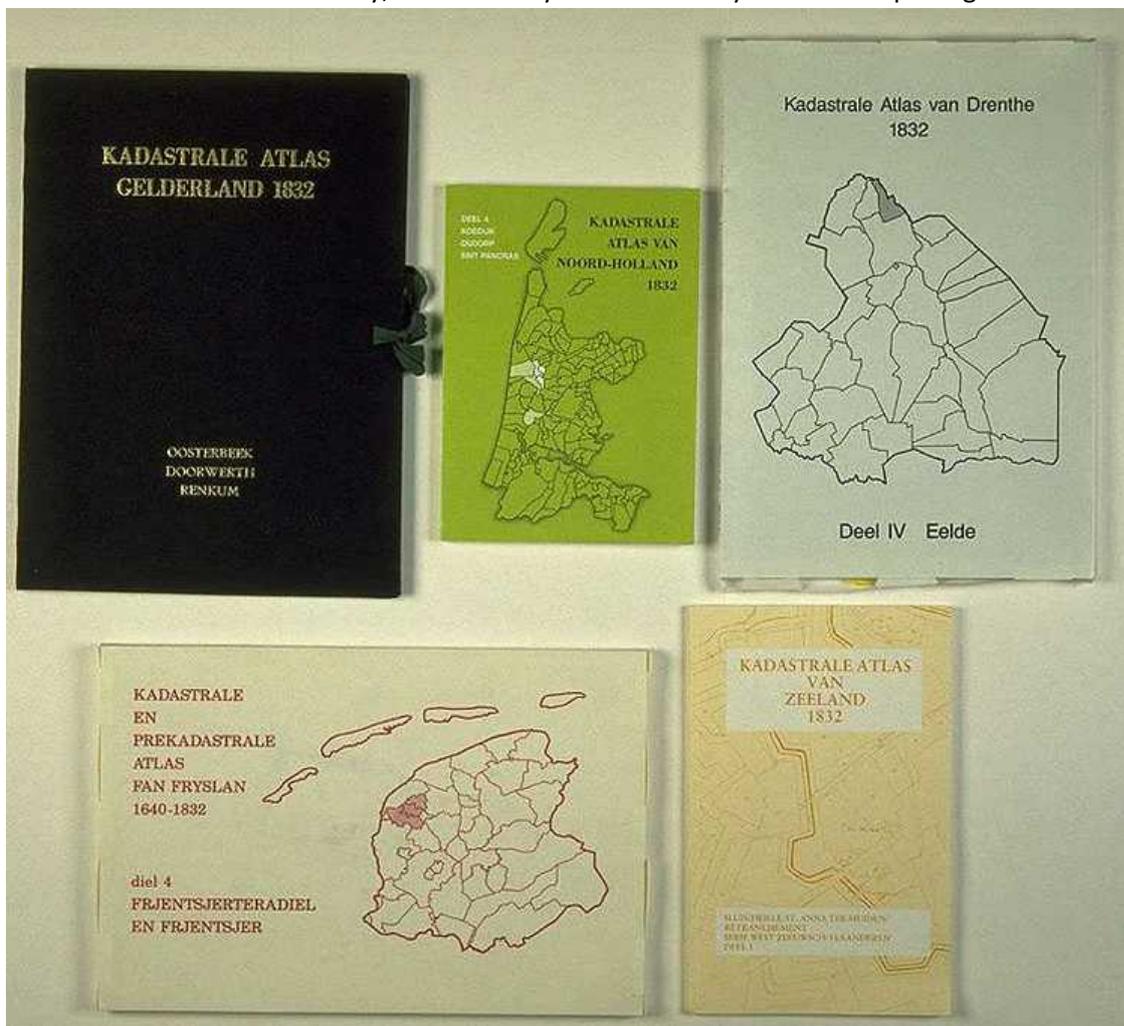


Photo 2. Five series of facsimile cadastral atlases.

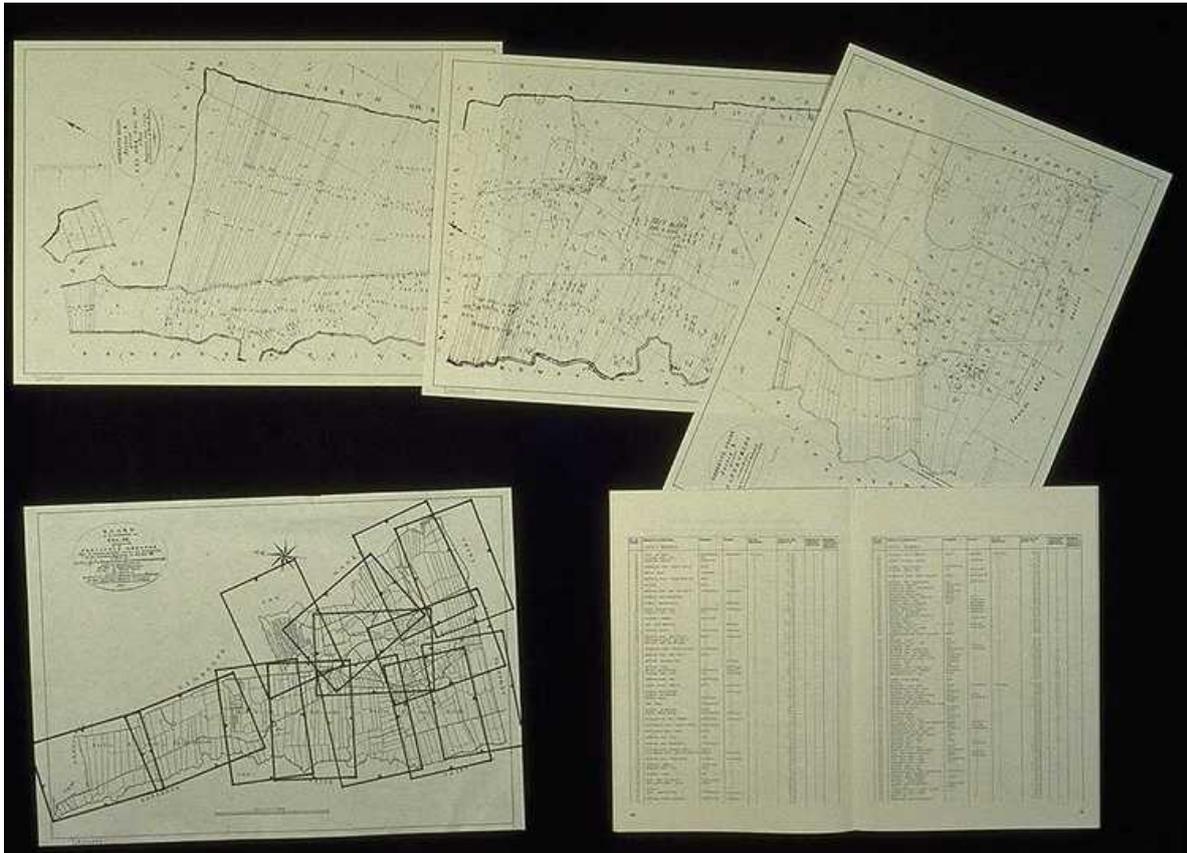
identity-registration. (19) Unfortunately they do not give many details of the topography though they were used, until 1932, a.o. as basic maps for the compilation of all Dutch topographic and urban maps (5).

Facsimile-editions of the first edition of the cadastral maps are published since 1985. The facsimile-maps are island-maps, as they have been surveyed per cadastral municipality and section, not taking

into account neighbouring cadastral municipalities. The scale varies between 1:1,000 and 1:5,000. Each parcel has been numbered. The maps are accompanied by the OAT's (original list of owners), which give information about the name, profession and domicile of the owner or usufructuary, kind of buildings or landuse. At the moment there are facsimiles of cadastral atlases published in 8 provinces. Per province a society has been founded which will publish the cadastral minute-plans together with the list of parcels and owners of 1832. All maps have been reduced from their original format of 70 x 100 cm to A3 (ca. 30 x 42 cm). But the publication of the provinces of Friesland, Drenthe, Gelderland, Overijssel, Noord-Holland, Zuid-Holland, Zeeland en Noord-Brabant differ considerable in size and lay-out. The amount of maps per atlas may vary from 4 to 80. Unfortunately the size of some of the atlases makes them difficult to store. At the moment some 60 atlases have been published.

As the original cadastral maps were not printed copies could be obtained only from the provincial cadastral offices. So regarding accessibility the facsimiles are a big improvement.

The following facsimiles are reproduction of maps which were produced before systematic topographic mapping, covering the whole of the country, started.



*Photo 3. Cadastral island maps with tables of owners.*

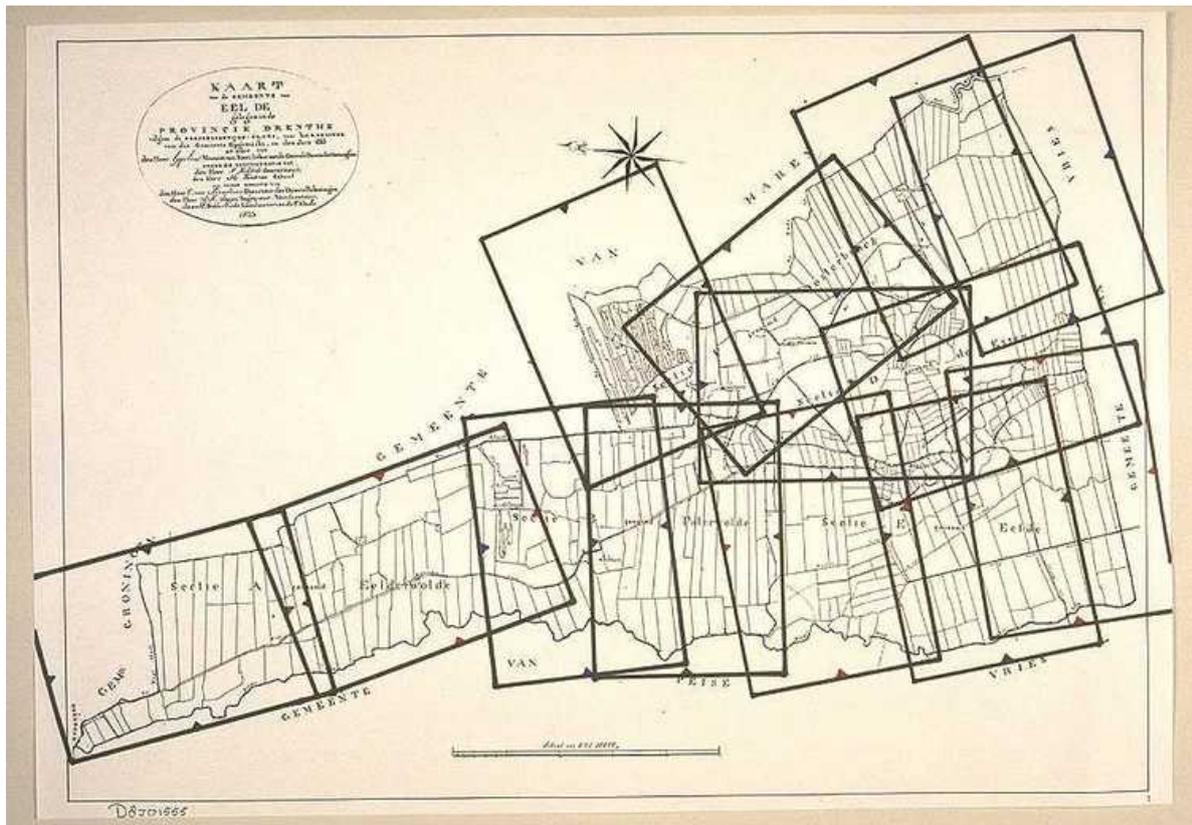


Photo 4. Index of a cadastral island map.

### 3.2. Atlas topographique van het frontier des Ijssels, Wedde en Westwoldingerland [1783]. Alphen a/d Rijn : Canaletto, 1983/1988

One of the first examples of homogeneous military mapping. However the lands were surveyed and mapped by several engineers (Van Hooff, Van Kesteren, Snoeck, Wollant and Van der Wijck), which is shown sometimes through inconsistencies. Besides that the map was too much military oriented to give enough detail. It was executed on the scale 1:14.400 (100 Rhineland rods to 1 inch) and consisted of 31 sheets, each measuring 58 x 96 cm.

The map was facsimiled in 83 sheets, reduced to the scale 1:25,000 and measuring each 40 x 55 cm, except the original sheets S,T,U,X,Y and Z and were published in 2 parts of the series "Historische buitenplaatsen van Nederland" (8)

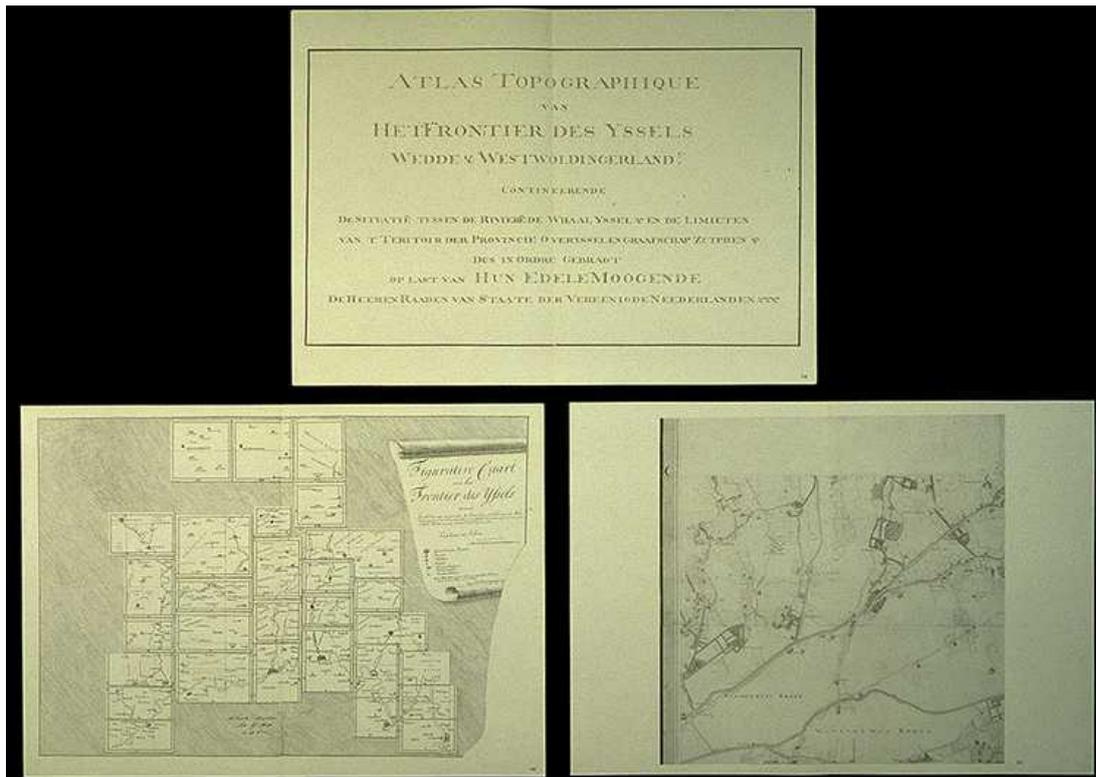


Photo 5. Atlas topographique van het frontier des Ijsels, Wedde en Westwoldingerland [1783].



Photo 6. 1 volume of the series "Historische buitenplaatsen van Nederland".

### 3.3. Topographische kaart van de Veluwezoom door M.J. de Man [1802-1807]. Alphen a/d Rijn : Canaletto, 1984.

To fill in a gap in the future Krayenhoff-map M.J. de Man was commissioned to survey the Veluwe in the central Netherlands. He did so between 1802 and 1807 with one assistant-engineer. The map was produced in 1812 on the scale 1:14.943. For the borders maps of 3 other surveyors were used. It gives a detailed impression of the area, showing landuse, vegetation and relief.

In 1984 a facsimile in colour of 38 sheets (originally there were 39 sheets), each measuring 40 x 57 cm, and reduced to scale 1:25,000 was published. (9)

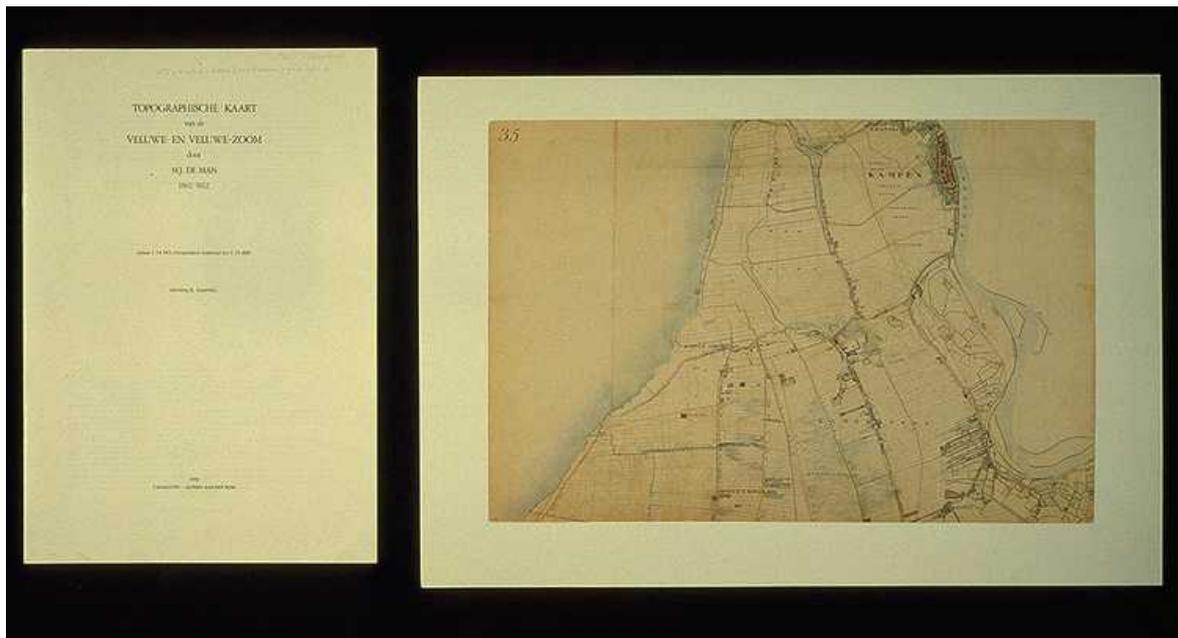


Photo 7. Topographische kaart van de Veluwezoom door M.J. de Man [1802-1807].

### 3.4. Tranchot-map 1802-1820. Maastricht : Stichting 'Maaslandse Monografieën', 1967

From 1802 onwards J.J. Tranchot executed a triangulation of the area between the rivers Meuse and Rhine. Field-surveys started in 1803 on the scale 1:10,000, but in 1804 the scale became 1:20.000. The survey was more detailed than the one for the Cassini-map, but the resulting map doesn't show altimetric-data. The relief has been beautifully executed, however. Furthermore all names have been executed according to a graphic classification.

The area west of the Meuse was surveyed in 1819-1820 by the Dutch topographic survey, while the area of the Rhineland was surveyed by the Prussians between 1816 and 1820. This resulted in the 264 sheet 'Tranchot-Muefflingsche Aufnahme rheinischer Gebiete 1:20.000', which was in first instance used for military purposes. The 38 "Dutch" sheets, reduced to the scale 1:25,000, were reproduced in 1967 by the Landesvermessungsamt Nordrhein-Westfalen on order of a Dutch publisher. The motif was the fact that the map showed a rather wide topographic spectrum making it into a rich source for historical-geographical research. (10)

## 4. Early facsimile editions of topographic maps produced by the TDN

### 4.1. Choro-topographische kaart der noordelijke provincien van het Koninkrijk der Nederlanden [1823]. Bussum : Fibula-Van Dishoeck, 1979.

The field-surveyors made many maps on scales varying between 1:5,000 and 1:30,000, of which many are still kept in the General States Archives. However, the models and sketches of the map were not found, which makes it difficult to reconstruct the real working method: projection, reduction and compilation. The prime-meridian of Paris was used. The first sheets were published in 1809 and the last one in 1823. In between most maps were several times reviewed/renewed, of which some are known as the 'French' edition. The 1823-series has been used for the facsimile. In 1829 the whole series was reprinted. After 1829 the copperplates were updated up till 1878. The Krayenhoff-map was to be used until 1876. The copperplates are still in the archives of the TDN. (7)

Like the Cassini-map on the scale 1:86,400 (1750-1815) the Krayenhoff-map on the scale 1:115.200 shows a rather small topographic spectrum. The depiction of settlements is limited to locating by means of old stylized signatures; landuse and parcelling are missing. Line-objects like dikes, roads and big waterways dominate the map. (16c) There is only a summary indication of culture and terrain forms. The maps shows the phase of transition of 18th to 19th century topographic mapping.

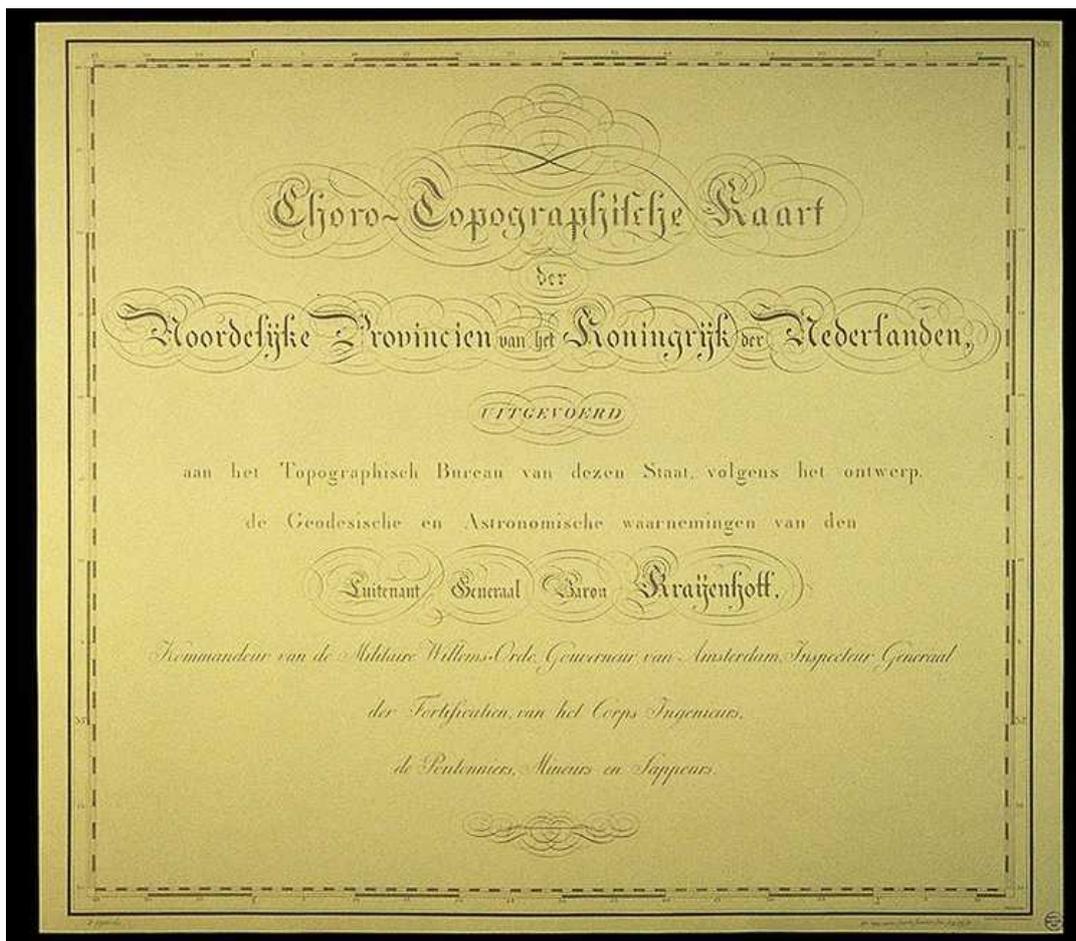


Photo 8. Title sheet of the Choro-topographische kaart der noordelijke provincien van het Koninkrijk der Nederlanden [1823]

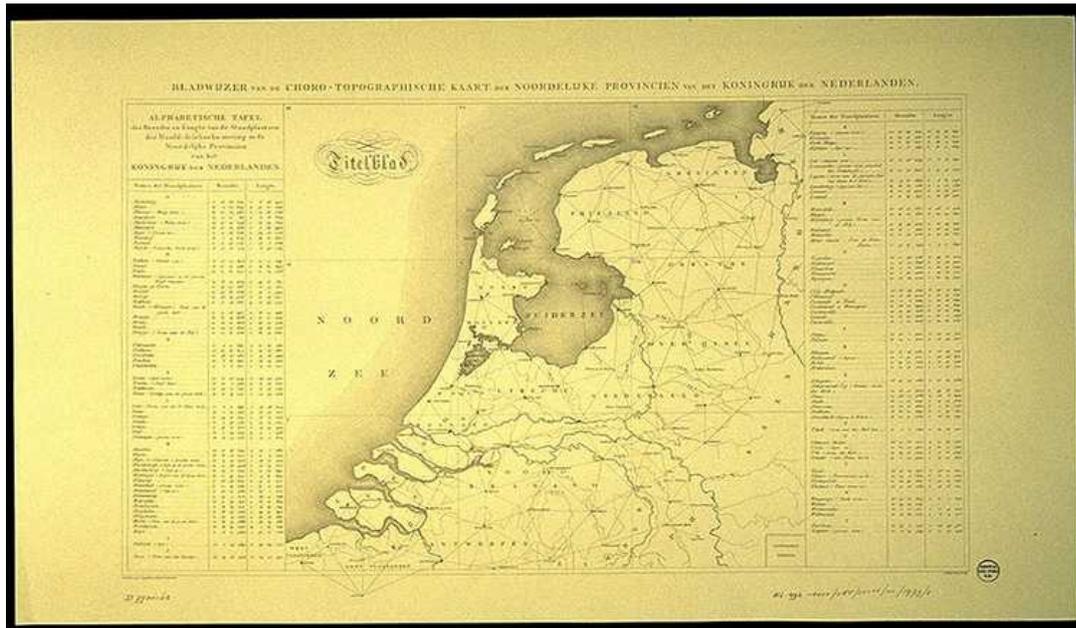


Photo 9. Index-sheet of the Choro-topographische kaart der noordelijke provincien van het Koninkrijk der Nederlanden [1823]

#### 4.2. Topografische en Militaire kaart van het Koninkrijk der Nederlanden (TMK) [1850-1864]. Bussum : Fibula-van Dishoeck, 1973

J.A. van der Linden writes in his introduction to this 1:50,000 facsimile: "Despite the beautiful engraving the map is hard to read, because she only could be printed in one colour, but mainly because the TMK is properly a map on the scale 1:25,000, which had to be reduced due to financial reasons. To judge well the characteristics of the map one has to use a magnifying glass and to consult the legend well". (5) Because most of the field documents originated as reductions from cadastral plans scale 1:2,500, which were supplemented with topographic details in the terrain, the old maps have a somewhat excessive detailed contents for modern conceptions. However the details make them the more attractive for scientific use. This was especially true for the 1960's and 1970's when environmental protection and the conservation of old landscapes and residential centres was advancing.

The maps were printed without colour which made it necessary to use an enormous amount of map symbols. This makes the cartographic depiction of the terrain-forms, habitation and landuse so complete and characteristic that one may speak of the "aerial photograph" of the 19th century. Furthermore upright lettering was used for manmade features and italic script was used for natural features.

In the 1960's and 70's there were many insistent requests from practitioners of the history of geography and of cartography for a facsimile. In 1972 the KNAG (Royal Dutch Geographical Society) formed a commission for the reprint under the condition that the KNAG should not have to bear any financial risk! As also the TDN couldn't take any financial risk they had to find a commercial publisher. Fortunately there were still publishers who were willing to take a risk and one of these is Unieboek, through its subsidiary Fibula-Van Dishoeck. (6)

When it was decided to produce a facsimile reprint of the TMK Ir. J.A. van der Linden and M.F. Fortuin, both of the TDN, had to go to great lengths to find some good copies to make the reprints, as only between 200 and 500 of the original copies were printed and most had been well used.

The reprint consists of a title page, sheet-index, a sheet with the explanation of the symbols (there is also a special English edition), and 62 map sheets measuring 64 x 92 cm. The paper on which the map was printed was specially produced to approach the original. A special cassette was made for the series.

The accompanying text has chapters on the previous history 1795-1850 (I), general aspects of the map (II), surveying, triangulation, drawing (III), reproduction (IV), literature and final remarks (V), summary in English (11 p.), and a table of map-sheets comprising: sheet-number, title, survey dates, engraving dates, years of first prints and reprints up till 1872 with number of copies printed.

## 5. Aspects of recent facsimile publishing

The reason for most facsimile-projects is to reproduce an original which is not available or only in a certain place and (very important for map-collections) to diminish the use of delicate, vulnerable and scarce copies. However this cannot have been the reason for the production of the modern topographic atlases as most sheets are available in the big map-collections, map-shops and other outlets of the TDN. In fact one cannot speak about true facsimiles as the atlases are created from original reproduction materials and cut into sheets of a different size than the original publication.

However the idea of publishing 1:50,000 atlases appealed to the TDN, but she couldn't bear the financial risk herself. But, to promote the publication she was prepared to sell the rights. This most times is a stumbling-block for a lot of enterprises. What normally happens is, that the publisher pays a lump-sum to the copyright-holder for re-publishing the maps. This can entail large sums of money, which makes the risk for the publisher overlarge, so they sometimes back off. An alternative however is to pay the copyright after publication, not as a lump-sum, but as a fee per copy sold. There is less risk for the partners and if the publication is a best-seller the copyright-holder usually gains more than when he would have taken a lump-sum. Sometimes a mix of the two systems is applied, as with CNES/SPOT Images, where a lumpsum is paid, but if the number of copies is higher than a certain amount a fee per copy has to be paid. In the case of the TDN atlases there has been made use of the right-per-copy model.

Except for the 1970's facsimiles all other atlases have been published by either Wolters-Noordhoff Atlasproductions (WN) or Robas. WN as well as Robas sell a lot of the TDN-atlases through direct-mail. (16f) When possible also single sheets of the facsimiles of older maps are offered for those who are not interested in the whole atlas. Usually one is directed to the TDN for single sheets of modern series or aerial photographs.

Wolters-Noordhoff Atlasproductions professed that once the 1:50,000 and 1:25,000 were published and established as standard publications they are intending to publish updated editions in future, as their aim is to produce 'evergreens' (Though there are contenders who say that if one possesses an atlas already it is seldomly replaced (1)).

The 1:50,000 atlases were their best sold publications in 1987, and had to be reprinted soon afterwards. Half of the impression of 5-10,000 copies of the first two provincial atlases (1:25,000) each were sold before the date of publishing.

Though the royalties play a fair part in the decision whether to create a certain publication the highest costs are the product-development, printing and promotion!

The sales successes depend on the properties of the provincial atlases themselves, but equally on a very professional marketing campaign. First there is the direct-marketing. This means e.g. that for the first two provincial atlases 425,000 glossy leaflets were distributed door-to-door in these provinces (12) (Groningen and Drenthe with resp. ca. 550,000 and 430,000 inhabitants). One week before the publication the press gets an extensive documentation-package, which includes the introduction, some press-releases and a 16 page map-section of the province in question, which is as exemplary as possible. This will produce a good coverage in local newspapers. On D-day the press is invited to be present at the presentation of the first copy to the Queen's Governor in the province (the modern 1:50,000 atlas was first offered to the Chairman of the House of Representatives). During this presentation there are introductions into the matter of topographic mapping etc. by the Director of the TDN and into the matter of publishing by the Publishing Manager of Wolters-Noordhoff Atlas

Productions. And this happens in all 11 provinces! (The atlas of the new province of Flevoland will not be published due too lack of sales-possibilities) (17)

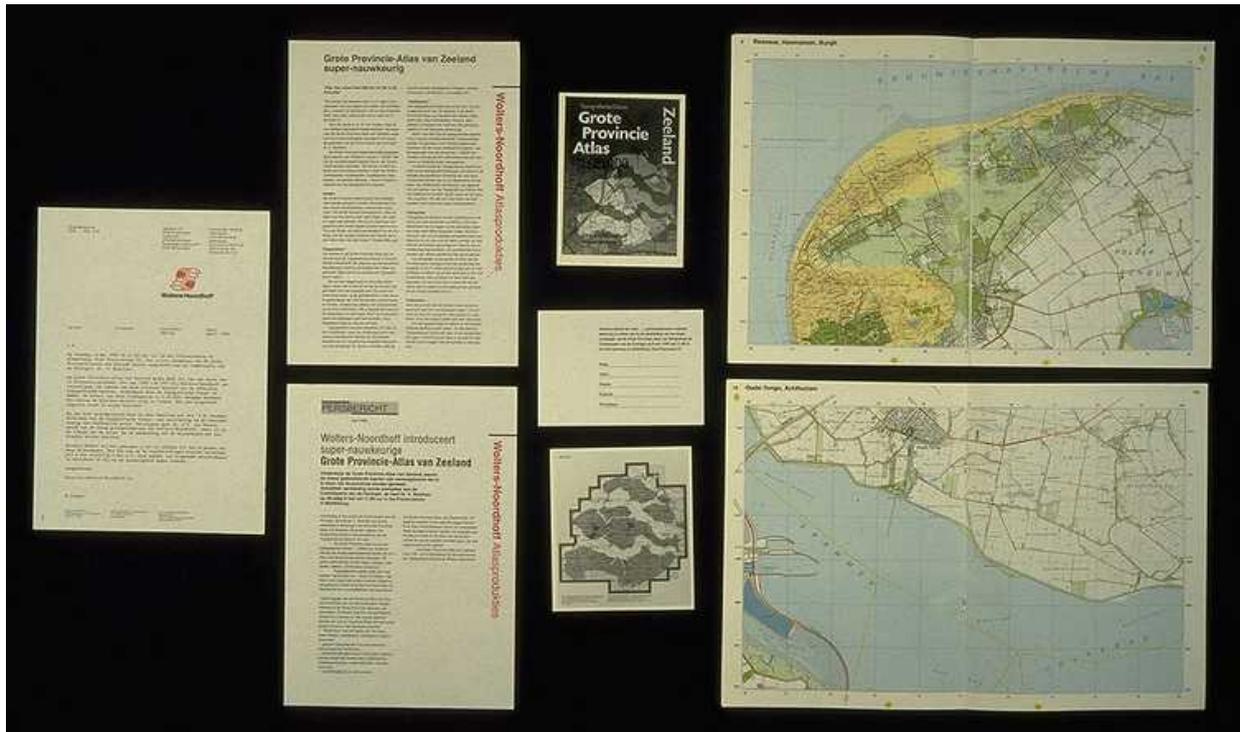


Photo 10. Marketing materials Wolters Noordhoff Atlases.

Robas, a publishing firm which started by publishing remote-sensing images, has a slightly different approach. They mail every household in The Netherlands once or twice a year directly. From the responses they create a marketing-profile. These profiles are used for specific approaches for specific publications. Unlike Wolters-Noordhoff they hardly use traditional outlets like bookshops, department-stores etc. Neither do they have a big publishing-campaign. However this makes their publications not less sought after!

Wolters-Noordhoff has traced by whom and why these atlases are bought. Research showed that buyers start to search for areas which they know from experience, while they live there or because they were born there. They are looking for their roots, their origin, their decent etc. The map not only is a means to orientate themselves in their surroundings, but also to clarify their existence. So sales depend mainly on emotional values. The atlases therefore are best sold in provinces where people have the strongest ties with their direct surroundings: Friesland, Zeeland and Limburg, provinces which are situated marginally! In Zuid-Holland, where many people live who have been born in another province, 1 out of 5 orders were for an atlas from another province. It was also interesting that response in the country-side was higher than in cities. In villages there most times is a higher appreciation for one's own environments than in cities. (20) In a personal communication from Robas they affirmed that for their publications the same considerations are true. They also think that the relative small amount of topographic data (The Netherlands measures only appr. 40,000 km<sup>2</sup>) coupled with the dense population makes for the excellent sales.

In his article about two centuries of the historiography of cartography, Koeman list one of the reasons why publications like e.g. the topographic atlases are possible, by describing the groups which are interested in older maps or their facsimiles. He discerns three consecutive periods for the history of cartography by its users: 1. the period of the archivists, mapcurators and the initiators of

the geographic societies; 2. the period of the (academic) professors and those who headed the topographic surveys; 3. the period of the democratic cooperation of historiographers: archaeologists, bibliographers, regional historians, pensioned private persons. He remarks also that The Netherlands counts momentarily some 600 regional and local historical/archaeological societies, of which some have more than 1,000 members. He adds that in the last period cartographers started also to be active in the history of cartography, which makes this science more interesting but also, which is even more important, more reliable. (14)

## 6. Recent facsimile editions of topographic maps and aerial photographs produced by/for the TDN

### 6.1. Grote Topografische Atlas van Nederland 1:50.000 [1972-....]. Groningen : Wolters-Noordhoff Atlasproducties, 1st ed. 1987; 2nd ed. 1989-....

The original map consists of 62 sheets, each divided into a West and an East sheet (making a total of 110 sheets), with a map size of 40 x 50 cm, comprising an area of 500 km<sup>2</sup> each. The legend is in Dutch, English and French. A new edition is published since 1959, giving a more intensive generalisation, more based on insight than on what is technically possible.

In the 1970's try-outs for the atlas were done with reducing the 1:50,000 to 1:100,000, 1:80,000, 1:60,000 and 1:55,000 to create a more handy size. Like Blaeu's town books it was intended that the verso of each map would be printed with texts concerning the area on the recto. Several publishers were asked to take on the project, as the TDN couldn't carry the risk itself, but they balked at the financial risk. Finally the firm of Wolters-Noordhoff was willing to take on the burden. The atlas is produced in 4 volumes, containing quarter-sheets and a total toponymic index of more than 40,000 names which includes co-ordinates and a code for the category of topographic object it belongs to. The introduction by the Director of the TDN gives an extensive insight into the history of the topographic surveying of The Netherlands, and in the process as to how the modern topographic map is produced. Furthermore it tells in synopsis what one can expect on the map. It contains also an index-map on which is stated when the last edition of a certain sheet has been published.

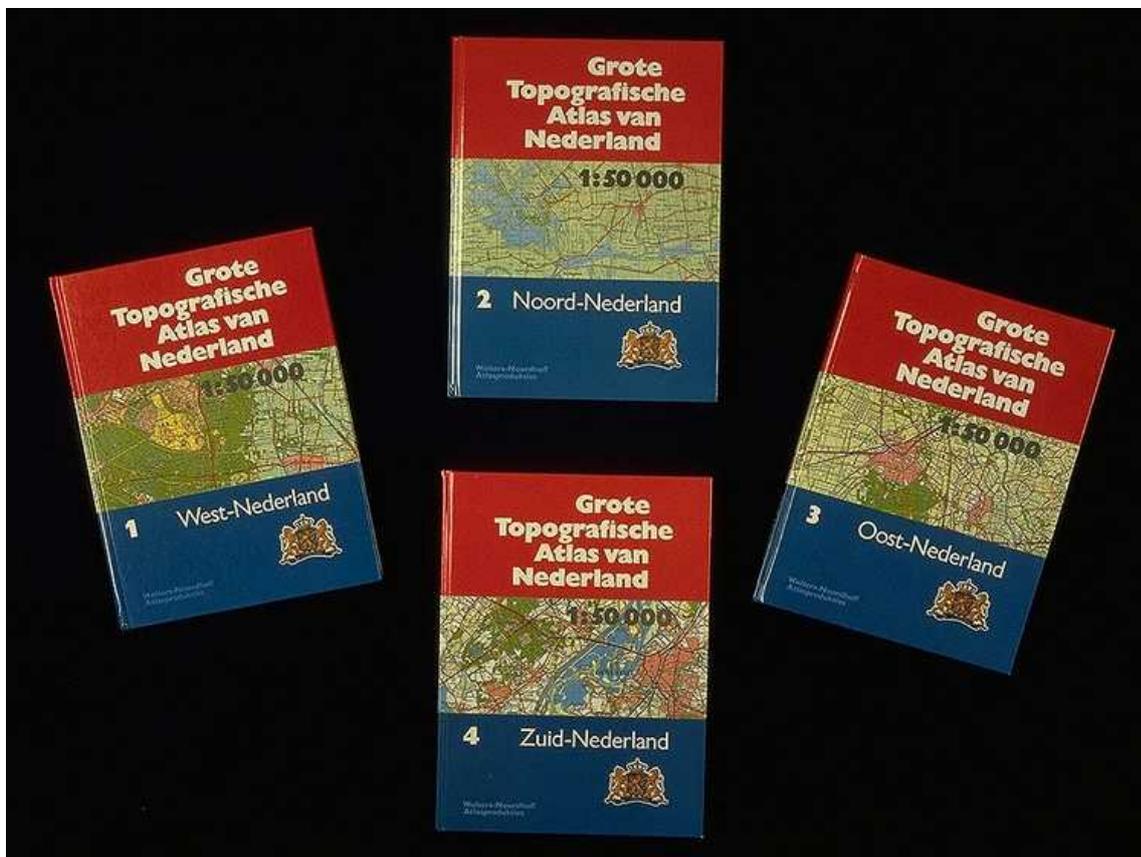


Photo 11. Topographic atlas of The Netherlands 1:50,000.

A problem is the review-cycle of the sheets, which brings sheets together which may contain information which is 10 years apart. To alleviate these problems second editions of some parts have been published up till now to bring the topographic contents as up to date as possible (16f) The publication of these atlases saves map-departments some 5-10% time in describing maps which don't contain (the right) mathematical data. Also the name-index (some 44,000 names) is more than handy identifying toponyms. I only hope that next editions will give geographical coordinates on all the border sheets, as these are sometimes missing.

## 6.2. Grote Provincie-Atlas 1:25.000 [1982-....]. Groningen : Wolters-Noordhoff Atlasproducties, 1st ed. 1987-1991; 2nd ed. 1991-....; 3rd ed. 1995-....

The original map consists of 62 sheets with the same sheet-numbers as the 1:50,000, but they are divided into 8 sub-sheets, indicated with the characters A-H, comprising each 125 km<sup>2</sup>

In 1964 the NATO decided the 1:25,000 was no longer an essential scale for military operations. This made the 1:25,000 obsolete, except for civilian use.

The success of the publication of the 1:50,000 atlas promoted the idea of publishing 1:25,000 atlases, arranged according to province (to appeal to the pride of the inhabitants). However, as the symbolization of the maps was drastically changed since 1981 they could only be published after all maps of a certain province had been renewed. This meant that production only could start from 1988 onwards and was finished in 1991. (16f)

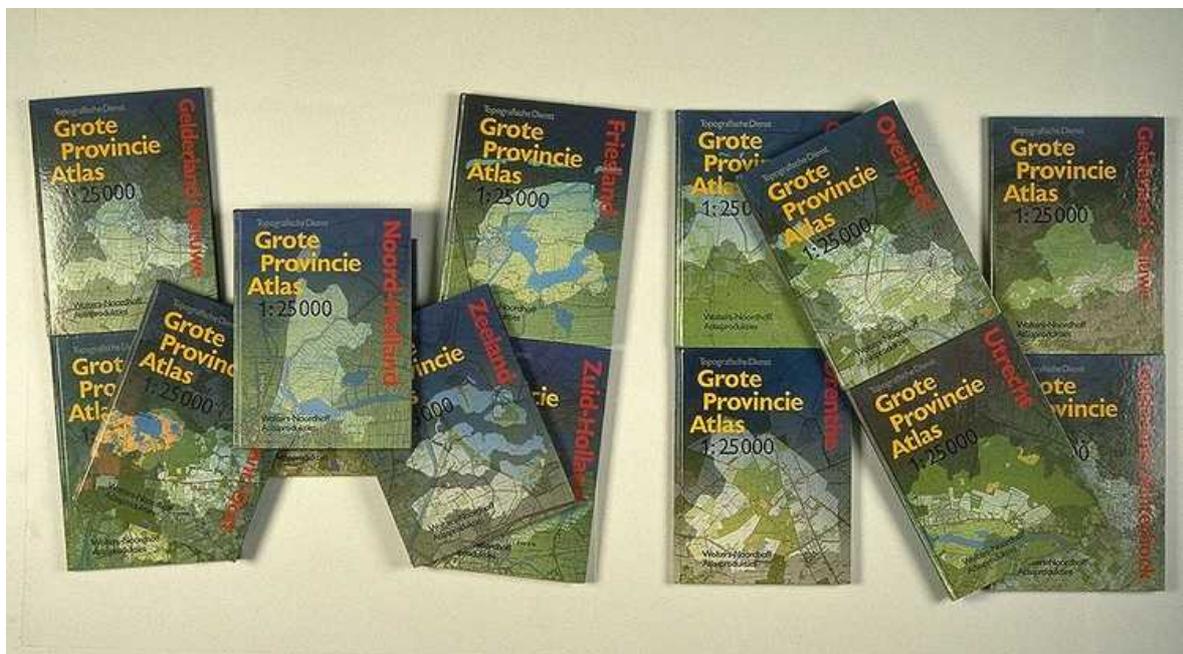


Photo 12. Topographic atlas of The Netherlands 1:25,000.

The atlases, like the maps, have been printed in 7 colours. Map-pages have an overlap in North- and South-direction of half a kilometre. Unlike the 1:50,000 atlases there is no extensive introduction into the history of mapping nor of the process of mapping the 1:25,000, which can be regarded as a drawback. However a specially produced overview-map with the new municipality borders (The Netherlands have gone through a drastic administrative reorganization the past 15 years) was added.

Also new extensive toponymic registers, which counts for all the 11 atlases (except the new Flevoland-province) together some 90,000 names, have been incorporated. To all names has been added a 2-character code, indicating one of 40 categories into which the physical and cultural features are categorized.

Extensive market-research shows that the atlases are not only sold to people from the upper- and middle-class, as an Ordnance Survey research of 1970 showed (B.D. Drewitt, *The map market in Great-Britain. Professional Papers, New series, no. 28. Ordnance Survey, 1975*), but also to the lowest income-quartile. This is remarkable as the price is almost Dfl. 100,- per atlas! The largest group of buyers is not a professional one, but consists of those who want to recognize and identify their own direct surroundings, especially if the area is not highly urbanized. A second large group uses the atlases for recreational purposes, for solving ecological problems and for the study of local history. The smallest groups are those who buy the atlases for aesthetical or professional reasons. Though professional users usually will own the sheet-maps already, they will buy the atlases because they are handier and easier to cope with than the original maps. One category is under represented: education. However, education in geography in secondary schools in the short-term will be more oriented towards map- and atlas-use (13).

### 6.3. Historische atlas ... : Chromotopografische kaart des Rijks 1:25.000 [1865-1933]. Landsmeer : Robas, 1989- 1990

As the old sheets of the 1:25,000 series are only available in a small number of libraries Robas decided to publish them as province-atlases for a rather cheap price. They were meant as a historical counterpart of the modern 1:25,000 atlases of Wolters-Noordhoff. (16f) The introduction to the atlases describes in synopsis the history of the cartography of The Netherlands as well as a description of the topographic mapping from 1800 up till the end of the 19th century. Though it describes also the manner of projection and lithography, it is easily readable. At the end it gives a small lexicon of cartographic and land-surveying terms. Unfortunately it doesn't give a specific introduction to the maps in each atlas itself, except that at the end there is an appendix with the surveying, revising and printing dates of each sheet plus an index-sheet. Another drawback is that it was not possible to publish maps which all show the country at a certain time, say 1880-1900, as either the maps were originally not all produced at this time or because the publisher found some of them of poor quality and decided to insert more beautifully executed maps of other times. This makes comparison of the total with other atlases sometimes difficult as the surveying may have taken place anywhere between 1865 and 1933.

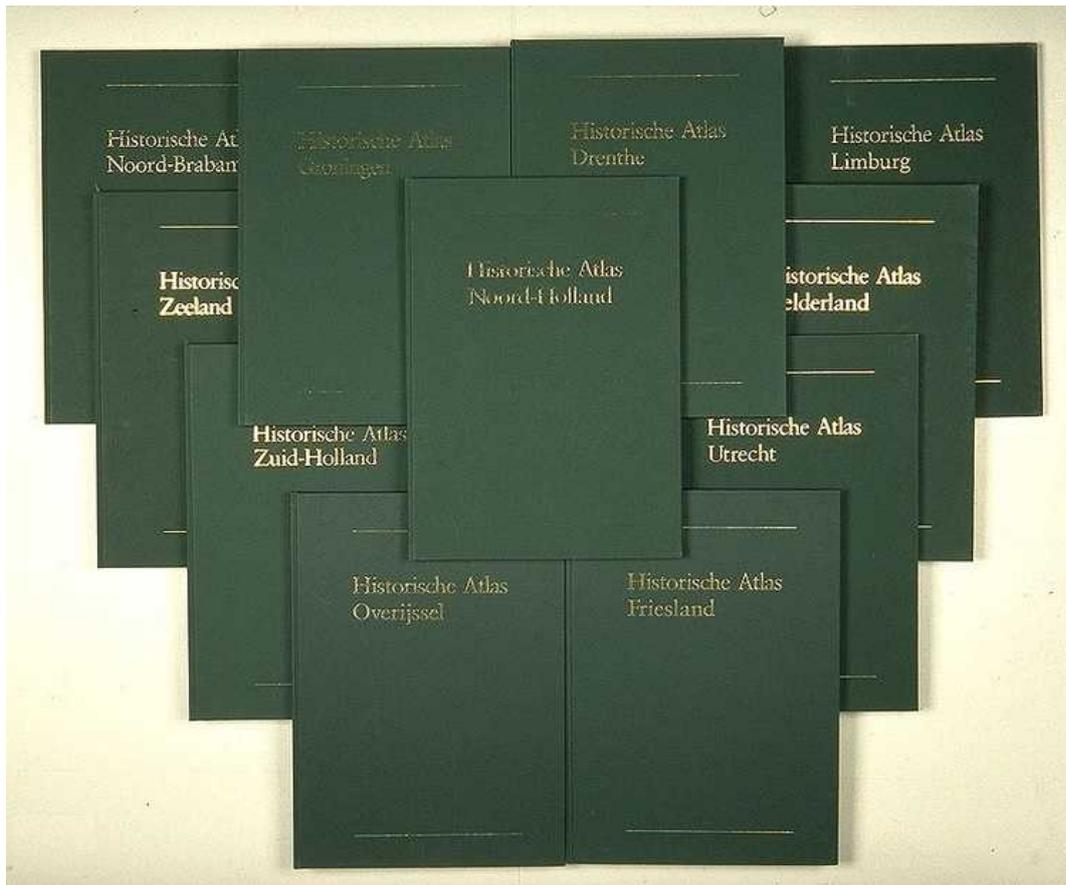


Photo 13. Chromotopographic atlas of The Netherlands 1:25,000 (1865-1933).

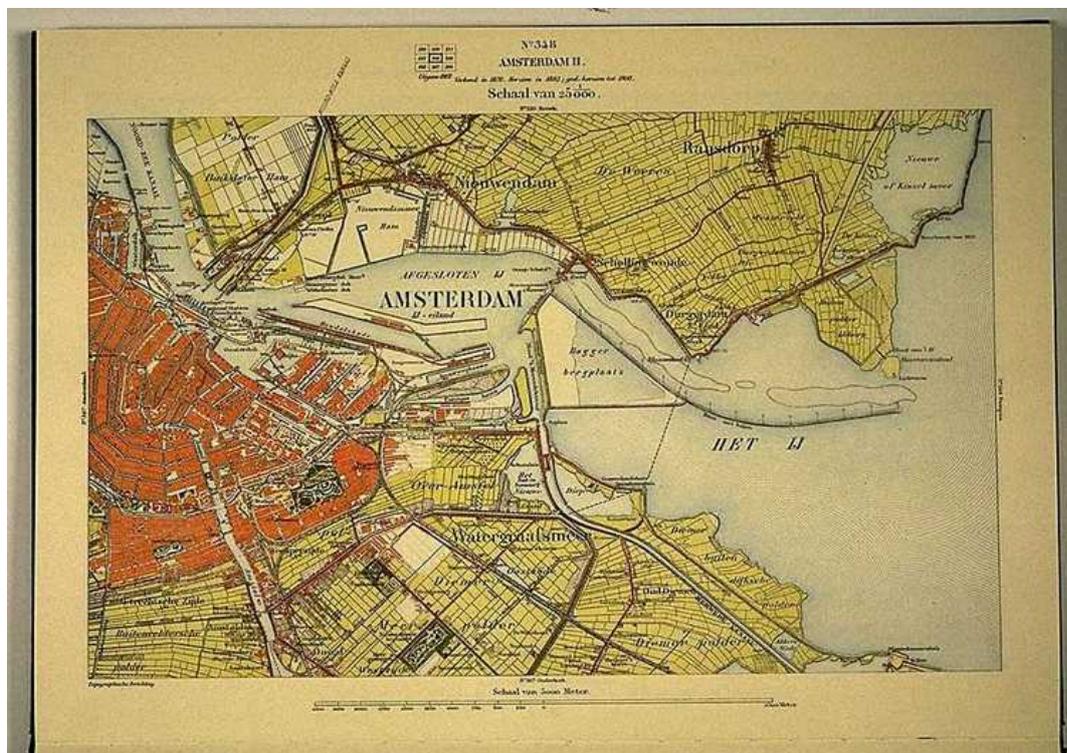


Photo 14. Sheet of the Chromotopographic atlas of The Netherlands 1:25,000 (1865-1933).

#### 6.4. Grote Historische Atlas van Nederland 1:50.000 [1834-1859]. Groningen : Wolters-Noordhoff Atlasproducties, 1990

In an article in the *Kartografisch tijdschrift* of 1989 Schilder pleaded for a facsimile of the fair drawings (fair drawings of the field documents) of the TMK as these colourful documents give an extremely detailed and unique image of the Dutch landscape in the 1st half of the 19th century, and they form a reliable source for the reconstruction of The Netherlands during that period. (15)

In 1990 WN published in cooperation with the General States Archives and the TDN the 'Grote Historische Atlas van Nederland 1:50.000' (Great historical atlas of The Netherlands 1:50,000) in the same way aligned as the 'Grote Topografische Atlas 1:50.000' which makes comparison of the present situation with that of 150 years ago very easy and pleasurable. (16f) The fair drawings were chosen as the coloured maps can be well compared with the modern maps. Examples of the fair drawings and the modern map have been included in the introduction for comparison.

The introduction (written by K. Zandvliet of the General State Archives and P.W. Geudeke of the TDN) to the atlases describes extensively the history of military surveying and the Topographic Survey and the history of the topographic mapping up till the publication of the TMK. Special attention is given +to the technical procedure with which the field-documents were made, so one knows the anamnesis (10) to the map. At the end some advice is given as to how to use the atlases and where to find information about the maps made/published before and after these maps. Lastly each atlas contains a list which states: sheet - surveyor - year of survey - draughtsmen - year of fair drawing.



Photo 15. Topographic atlas of The Netherlands 1:50,000 (1834-1859).

The atlases contain the fair drawings of 1839-1859 plus some of the earlier ones made for the province of Noord-Brabant, which were made between 1834 and 1839. The legend is constructed from the engraved TMK (1850-1864) in combination with the "Instructions of E.G.W. Roloff" (ca. 1840) and printed instructions by A.E.A. De la Porte (1851), as the military surveyors didn't use a homogenized set of colours and symbols. These were only standardized in 1852. Roloff says in his instructions that the map should depict all characteristics needed for offensive and defensive actions, so making it into a (detailed) military map. Sometimes cadastral maps -which have been surveyed by parcels- have been used as basis, so parcelling can be well discerned.

The field documents 1:25,000 measured 40 x 50 cm, 1/8 of a TMK-sheet. These were reduced to 1:50,000 fair drawings (40 x 25 cm), which fill 2 opposite pages in the atlases. Toponyms were mostly obtained from the local people. Not everyone had knowledge of dialects and neither did every surveyor put down all the names well, so some curious toponyms were put down. Added is an list of names of surveyors and draughtsmen with dates.

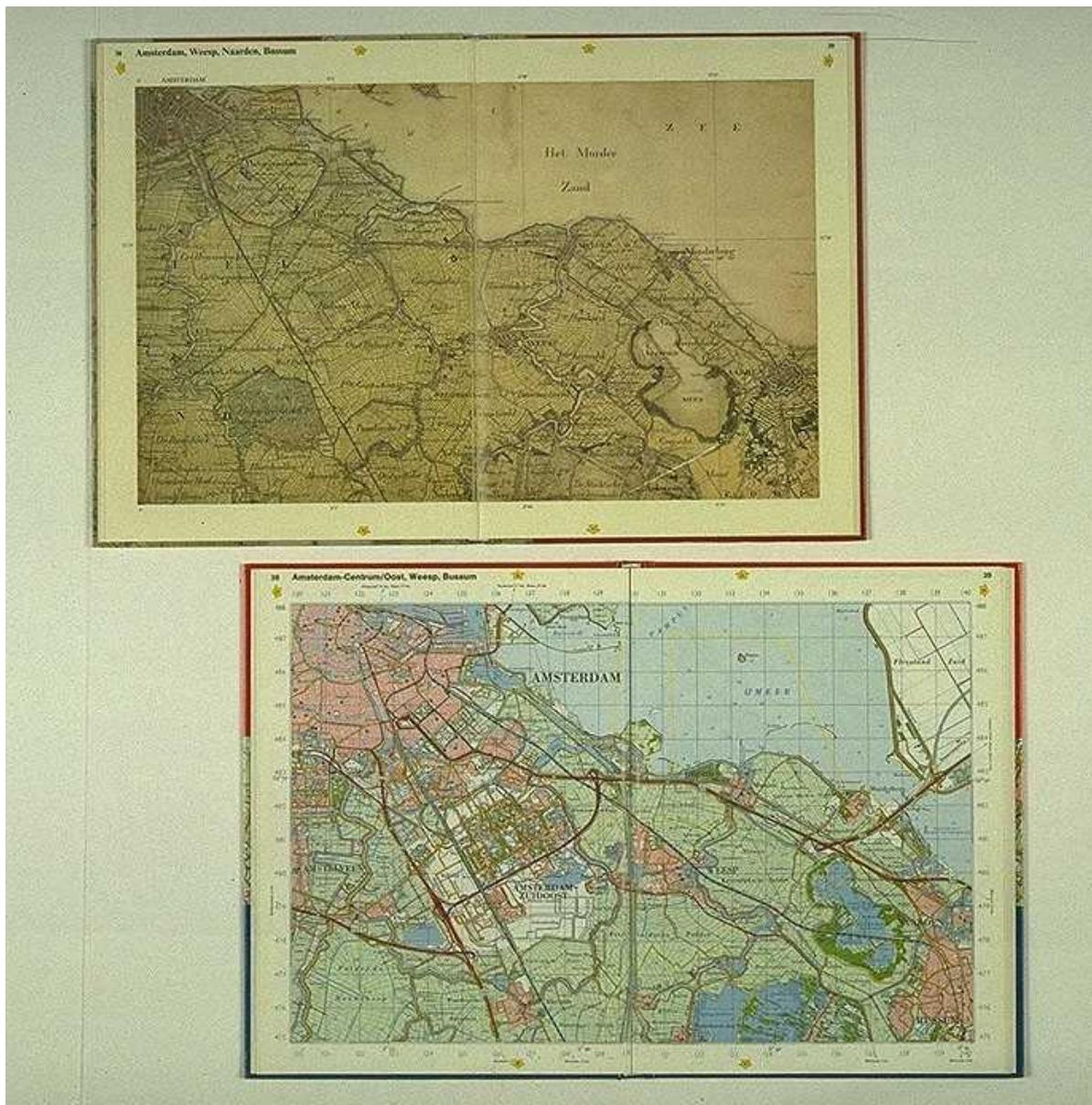


Photo 16. Comparable sheets of the modern (1988-....) and old (1834-1859) Topographic atlas of The Netherlands 1:50,000.

In an article about these atlases Johan Beenakker describes some of the important themes in historical-geographical research of the spatial development and the realization of the present organisation of the residential areas. These are: the waterstaat (construction and maintenance of dikes, building of locks, mills and steam mills), the infrastructure (the pattern of country roads, the construction of canals, railways), the built-up areas (diffuse and concentrated habitation) the land-parcelling (irregular or homogenous) and landuse (animal husbandry, agriculture). However he warns that a comparison of the situation ca. 1850 with the present creates only an image of the development, but not the explanations. Furthermore he shows how these atlases can be included in geographic projects in secondary schools, to make the pupils aware of the changes to which the surroundings are subject to. (18)

### 6.5. Foto-atlas ... 1:14.000 [1989]. Landsmeer : Robas, 1990

Since the 3-yearly cycle began in 1981 aerial photographs were taken in 1989 of the whole of The Netherlands on the scale 1:18,000. The photographs are taken to update the topographic maps as well as to compute the amount of money that municipalities will receive from the 'Municipality Fund'.

In 1990-1991 Robas published 12 provincial atlases, containing ca. 4,000 aerial photographs, reduced to the scale of 1:14,000. The atlases contain all photographs of the province in question, except that some military terrain has been obliterated. The preface to each atlas describes in a very elucidating way the history of aerial photography from 1939 onwards and goes on to describe how these photographs are used to make maps. The photographs cover an area of 4 x 4 km and are printed in the direction of the photo-flight. They have been renumbered, but the original number is printed at the bottom (next to date and time when it was taken) in case one wishes to order copies from the TDN. Each photograph is named after the principal town depicted, and these names are gathered into an index. At the bottom an index-map of the surrounding 8 photographs is given. The only drawback is that, though they measure 27 x 27 cm, they are bound in a soft cover, which makes them a little bit unwieldy.

Next to this Robas publishes some 1,000 'photoplans'. Some 800 from the TDN-archives, some 200 from the archives of KLM-Luchtfotografie, taken between 1950 and 1980. Aerial photographs are seamed together around a built-up area and enlarged to 1:12,000. Then a cutout is made of appr. 40 x 45 cm and printed in an impression of 100 to 200 copies on 170 gr. cellulose-free machinecoated paper. Afterwards the 50 x 60 cm photoplan-sheet is coated with an UV-finish.

To top it off Robas is momentarily flying the 'Photographic map of The Netherlands'. This map consists of appr. 18,500 colour-photographs on scale 1:12,000. After processing they are enlarged to 1:6,000 and printed over with the Dutch triangulation grid. These analog pictures are sold to private firms, and certain state, provincial and municipal authorities. In future they may be sold on CD-ROM or another digital form. Unfortunately the whole series costs about Dfl. 500,000 which is too much for a library or archive. They plan to fly the whole country every two years!



Photo 17. Aerial photographic atlas of The Netherlands 1:14,000.

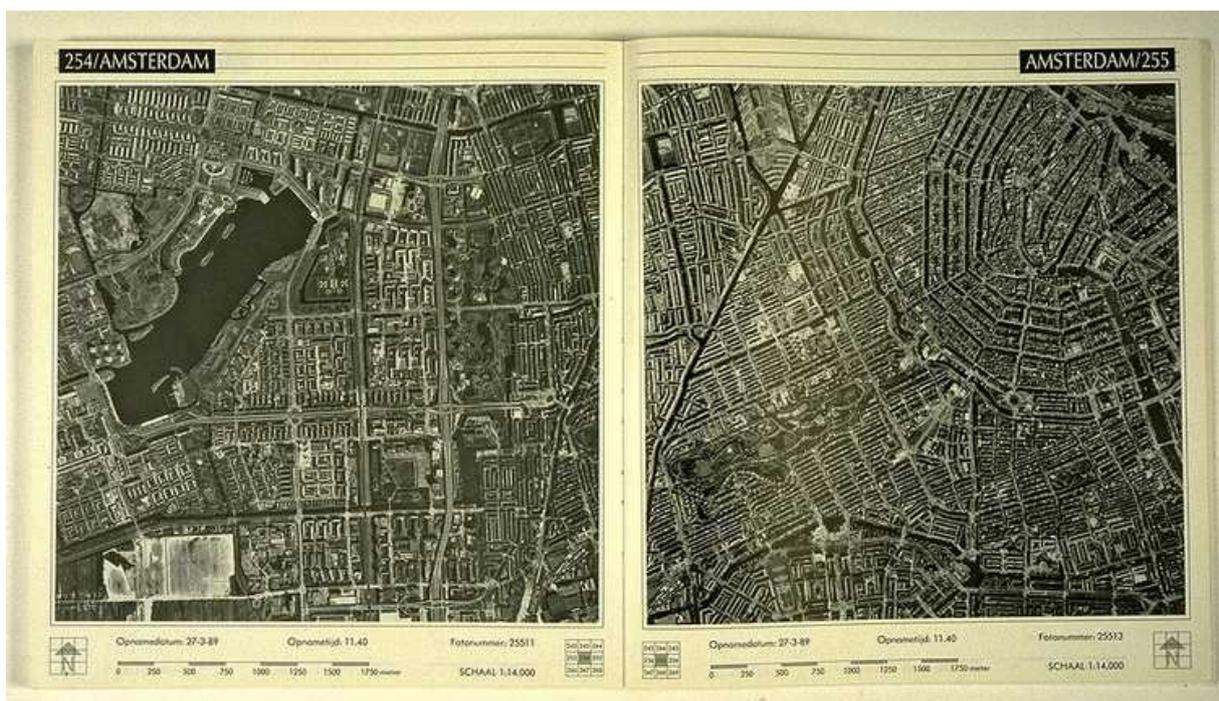


Photo 18. Aerial photographic atlas of The Netherlands 1:14,000.

6.6. Grote Historische Provincie-Atlas 1:25.000 [1834-1859]. Groningen : Wolters-Noordhoff Atlasproducties, 1992-....

The maps are an enlarged reproduction of the same fair-drawings which have been used for the publication of the 'Grote Historische Atlas van Nederland 1:50.000'. Though the original field documents 1:25,000 are kept in the General State Archives, they are not complete. Often the toponyms are not legible, because lettering has been done in the field. Besides some documents have corners broken off or are smudged. As the information on the field documents doesn't deviate much from that on the fair drawings the choice for enlarging the latter can be justified.

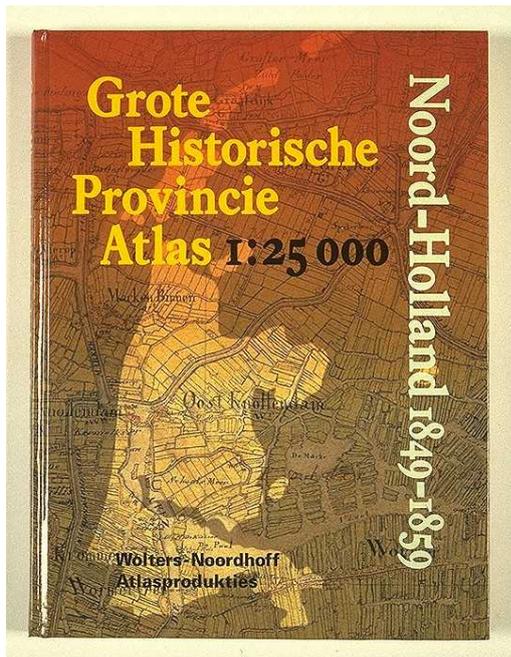


Photo 19. Topographic atlas of The Netherlands 1:25,000 (1834-1859).

As with the 1:50,000 counterpart to the modern atlas the original maps have been cut in such a way that they can be aligned with the modern 1:25,000 atlas, which will make comparison in time easier. But the atlases have some extra's. A short historical introduction in the mapping process of the TMK, a list of surveyors and fair drawers with dates, an 'Etappekaart' of 1848 (a map on which day's marches of military contingents could be measured) and a facsimile of part of the 1573 map of Christiaan 'sGrooten. Lastly an index of placenames based on the spelling as used on the fair drawings is included.

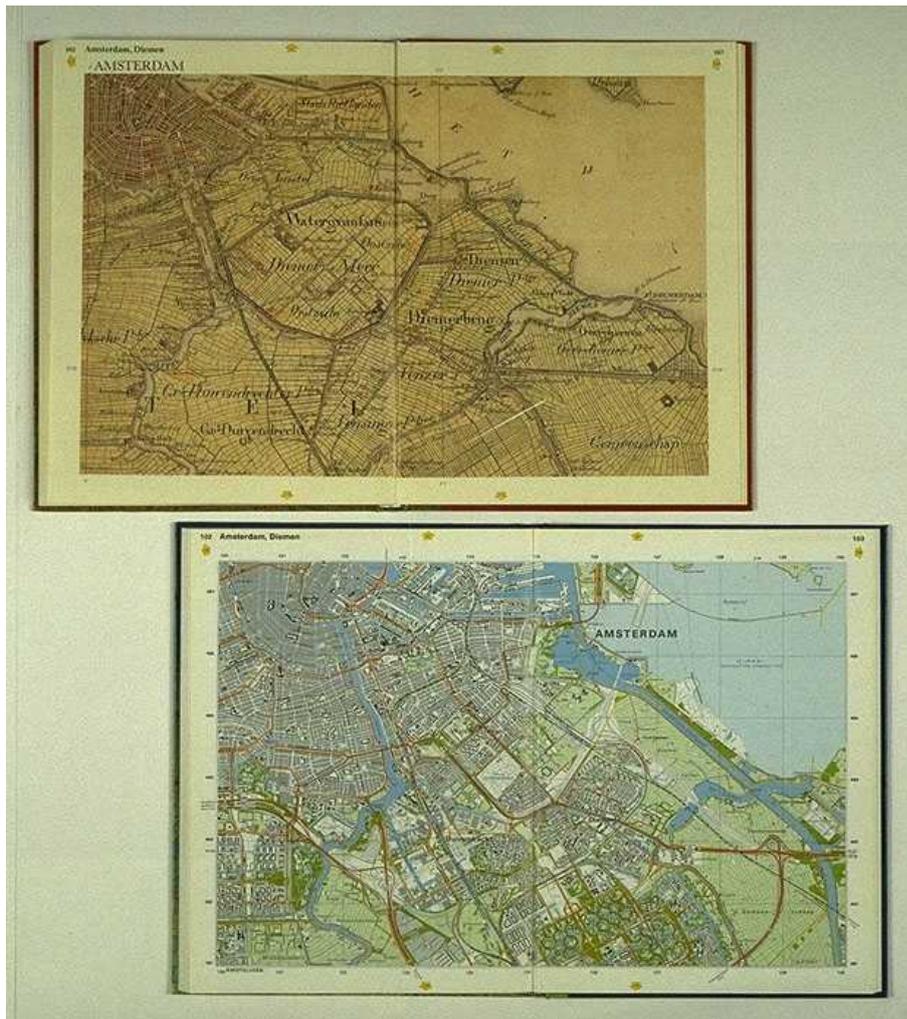


Photo 20. Comparable sheets of the modern (1988-....) and old (1834-1859) Topographic atlas of The Netherlands 1:25,000.

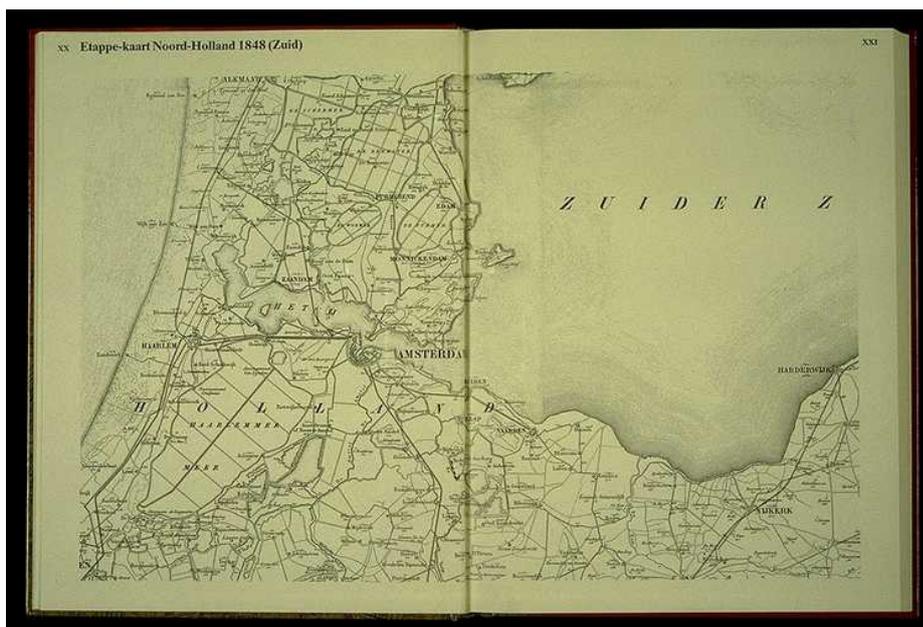


Photo 21. Military stage map of The Netherlands 1:200.000 (1848).

## 6A. Additional editions 1993-2016

1. Topografische atlas 1:25.000. – Landsmeer : Uitgeverij 12 Provinciën, 2012-... Delen: 12 delen, sommige ook als losbladig.
2. Topografische atlas van Nederland : schaal 1:50.000 / [auteur: Marcel Kuiper ; samenst.: Rob Kersbergen ; kaartmateriaal: Topografische Dienst/Kadaster]. - Landsmeer : 12 Provinciën
  - a. 5e druk 2015
  - b. 4e herziene druk 2013
  - c. 3e herziene druk 2011
  - d. 2e herziene druk 2011
  - e. 1e druk 2010
3. Topografische Atlas van Nederland 2009 : schaal 1:100.000 / [Marcel Kuiper ; samenst.: Rob Kersbergen]. - Landsmeer : Uitgeverij 12 Provinciën, 2009
4. Topografische atlas 1:25.000. - Landsmeer : Uitgeverij 12 Provinciën, 2009-2010
  - a. Noord-Holland
  - b. Zuid-Holland
  - c. Waddeneilanden
5. Historische topografische atlas. - Tilburg : Nieuwland, 2008-...
  - a. Achterhoek, Liemers, Rijk van Nijmegen : ±1843-1845 : schaal 1:25.000
  - b. Noord-Brabant : ±1836-1843 : schaal 1:25.000
6. Topografische dubbel atlas : 1:50.000. - Landsmeer : Uitgeverij 12 Provinciën, 2007-....
  - a. Noord-Holland
  - b. Utrecht
  - c. Zuid-Holland
  - d. Zeeland
7. De atlas van Huguenin : militair-topografische kaarten van Noord-Nederland : 1819-1829 / H.J. Versfelt en M. Schroor. - Groningen [etc.] : Heveskes, 2005
8. Historische topografische kaarten ... : bladen van de Chromo-topografische kaart van het Koninkrijk der Nederlanden, schaal 1:25.000, ... - Landsmeer : 12 Provinciën, 2003-....
  - a. Drenthe
  - b. Groningen
  - c. Noord-Holland
  - d. Utrecht
  - e. Zuid-Holland
  - f. Zeeland
  - g. Noord-Brabant
  - h. Limburg

## 7. Final remarks and Literature

The biggest disadvantage of the WN-atlases is that the map is a continuum over the joint so the information in the joint is sometimes more difficult to read. For photocopying one still needs the original map-sheets. For both the Robas and Wolters-Noordhoff publication one may ask whether elder people will not have trouble reading the information, because of its high density. I would have preferred that a magnifying-plate was added, as with the 6th edition of the National Geographic Atlas of the World.

Another drawback is that maps of the TMK cannot always exactly be compared to modern maps as the sheet-image may have shifted a little bit. This is because two different projections have been used, the Bonne and the stereographic.

The 'Grote Historische Atlas van Nederland' has been presented to the Secretary of Defense to highlight the 175-year jubilee of the TDN in 1990. Let us hope that the publication of these topographic and airphoto atlases do not indicate the end of an age of transition from hardcopy topographic maps to TIS (Topographic Information System, in which hard-copy will only be produced on request). Though the topographic information of the TDN has a lot of professional and institutional users the sale figures of the atlases must indicate that there is a big request for this kind of compounded hard-copy topographic information. The sales successes are such that the commercial publishers indeed are making them into evergreens and thereby keep providing the present users with an updated topographic situation of The Netherlands.

Furthermore I hope this Dutch atlas-publishing plan provides an example for those in other countries who are interested and responsible for the diffusion and promotion of the use of cartographic materials!

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