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13th Conference
of the
International
Cartographic
Association
Commission
on Cartographic Heritage
into
the Digital

DIGITAL APPROACHES TO CARTO- GRAPHIC HERITAGE

Madrid
**18-20.4
2018**

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Published by the Laboratory of Cartography & Geographical Analysis, Aristotle University of Thessaloniki

International Cartographic Association
Commission on Cartographic Heritage into the Digital
Digital Approaches to Cartographic Heritage
Editors: Chrysoula Boutoura
Proceedings
13th ICA Conference *Digital Approaches to Cartographic Heritage*
Madrid 18-20 April 2018
Thessaloniki: AUTH CartoGeoLab – ISSN 2459-3893



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The Proceedings distributed to all registered participants
of the Madrid2018 Conference
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The 13th Conference of the series *Digital Approaches to Cartographic Heritage* organised annually, since 2006, by the
ICA Commission on Cartographic Heritage into the Digital, hosted by IGN - National Geographic Institute of Spain, Madrid, on 18-
20 April 2018

ICA Commission on Cartographic Heritage into the Digital: <http://cartography.web.auth.gr/ICA-Heritage>
12th ICA Conference “Digital Approaches to Cartographic Heritage: <http://cartography.web.auth.gr/ICA-Heritage/Madrid2018>
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Web-based and printed Czech Historical Atlas

Keywords: Czech Historical Atlas, atlas, preparation of cartographic work, historical cartography, thematic cartography, web atlas

Summary

Czech Historical Atlas represents a project under which historical maps of the Czech lands and Central Europe arise in the coming years. There are two main project outputs planned. A web atlas dedicated to history of the Czech lands from prehistoric times to the recent past will be the first. The second important output is comprised of a printed atlas focused on Czech twentieth century history. The aim of the new atlas is to build on previous historical atlases – such as the Academic Atlas of Czech History (2014) or earlier post-war works of Czechoslovak cartography – and to access latest research results of historians in the form accessible to experts, teachers, students and other users interested in history. Within the project, the Institute of History (Czech Academy of Sciences) and the Czech Technical University in Prague are involved. Both organizations bring together collaboration of historians, geographers, cartographers and geoinformaticists from a number of other institutions.

A special database of historical atlases has been created and designed. Its structure reflects not only the thematic focus of searched atlases but also the subsequent short list of atlases which show the studied area (Central European region with emphasis on the former Czechoslovakia or contemporary Czechia, respectively), and supposed solutions for both versions of the atlas. The aim of this background research was to create a knowledge base for the conception of the atlas performed in the next step.

Historians from the Academy of Sciences of the Czech Republic selected historical themes. In total, there are more than 160 maps. Most maps will be published in both project outputs - the printed and the digital atlas. Unique technologies for publishing a web atlas have been tested. Map templates of different scales have been prepared. The preparation of map templates, including the boundaries of territorial units and waters (watercourses, lakes and sea) are one of the most important elements. All maps of the same scale must be created in the same template. Subsequent viewing of multiple themes in one map at the same time is possible in the web ma application.

Introduction

Every state in the world has its specific history, which was very often recorded in chronicles. Significant historical milestones, such as the coronation of a monarch, major buildings and battles, were graphically only displayed in pictures in the past, later in photographs, and, in the last century, video recordings have also been used. Statistical data, e.g. the number, age and composition of the population, distribution of industries and others, used to be recorded only in statistical year books. However, every historical event and statistical variable are related to some position, and, for this reason, maps started to be used for capturing historical milestones and the development of essential statistical data as well. Among other important elements which have lent themselves to capturing solely by means of a map since the Middle Ages, there are borders of neighbouring states, positions of individual settlements, water courses, mountain ranges, including the highest peaks and major transportation routes.

An old (a map created in the past, but up-to-date at the time of its origin) or a historical (the map content is related to the past already at the time of its publication) map has always attracted the interest of both professionals and the general public. It is thanks to a map that most people can understand the relevant correlations, and the presentation of historical events on maps often looks more user friendly.

The Czech Republic has a rich history, which has been captured in historical atlases several times. The map content, however, was frequently affected by the political situation and, therefore, the topics of the

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20th and the start of the 21st century have not been treated on a larger scale yet. Most members of our research team have already participated in the creation of The Academic Atlas of Czech History of 2014 (Purs, 1964). This extraordinary book won the Magnesia Litera 2015 prestigious award in the Czech Republic. As a historical atlas it depicts significant events and the territorial development of the Czech (Czechoslovak) Republic and its close neighbourhood from prehistoric times to the present. The Czech Historical Atlas project is a follow-up to this publication aiming at creating a Czech web-based historical atlas reflecting historic events and, alongside that, creating a more detailed printed atlas representing the territory of the Czech Republic in the 20th century. The first significant historical atlas was the “Atlas of Czechoslovak History” published in 1965, which covered a wide range of historical topics (Semotanová, 2014). The appearance of both publications is shown in Fig.1. The current project is supported by the Ministry of Culture, Czech Republic, and is developed in collaboration of professionals from the Czech Technical University in Prague and the Institute of History of the Czech Academy of Sciences. The resulting printed and digital atlas should be available by the end of 2020. The target group for using the atlases are both history experts and the general public interested in history. Basic knowledge of reading maps on the users’ part can be assumed. At the same time, they tend to belong to a senior citizen group, which implies that they may be vision impaired and less experienced in using web-based technologies.



Fig.1. The Atlas of Czechoslovak History of 1965 and The Academic Atlas of Czech History of 2015

Database of historical atlases

Prior to creating the atlases, the planned electronic and analogue atlas concept was developed within the project. Individual main component parts of the electronic portal were identified. The concept was based on a previous extensive literature search of atlas and map sheets of both the Czech and foreign origin, mainly atlases and other literature available in libraries and in the map collection of the Faculty of Science, Charles University in Prague.

The resulting output was an extensive database of historical atlases issued since the second half of the 20th century. The link to the outputs from this database is available on <http://maps.fsv.cvut.cz/atlas/> (a website in Czech). The portal print screen is displayed in Fig. 2. The database currently contains 409 historical atlases. The outputs can be searched by using individual filters searching by the atlas name, author’s name, publishing house, country of publication, language, data of publication, library, type of atlas, cartographic method and map categorization.

The database contains map sheets in the following languages – one hundred and thirty in German, one hundred and seven in Czech, seventy-seven in French, seventy-three in English, thirty-one in Polish, ten in Slovak, two in Hungarian and one in Italian. It is a unique collection of all major publications

accessible to the professional and the general public.

Databáze historických atlasů od druhé poloviny 20. století



Fig.2. Database of historical atlases since of second half of the 20th century

Selection of relevant topics

Another very important step is first to identify and successively to select suitable topics and subject areas for a complex coverage of the history, particularly of the 20th century. The atlas will contain maps related to issues of social and economic history, history of everyday life and the development of the population and society. A literature search of ongoing and completed projects of geographic workplaces focusing on development and historical-geographic topics with the same objective was used in the identification phase. The study covered materials concentrated in several memory institutions in Vienna and Czech history atlas cartography.

Historical maps were selected by historians and divided into nine categories. The creation of maps will be solved in the next project phase. The first relevant topic is transportation. Transport infrastructure maps will be compiled for road, railway and other modes of transport. Other issues covered are transport accessibility in individual years, direct air flights and the development of urban public transport. Communication networks of postmail connection is displayed in Fig. 3. The second topic are maps with historical research. This area will address historical discourse and its changes in school historical atlases of Czechoslovakia and the Czech Republic, and, furthermore, Central Europe and its territorial demarcation and extinct settlements.

III.05b POŠTOVNÍ SPOJE NA ÚZEMÍ ČECH A MORAVY V RANÉM NOVOVĚKU

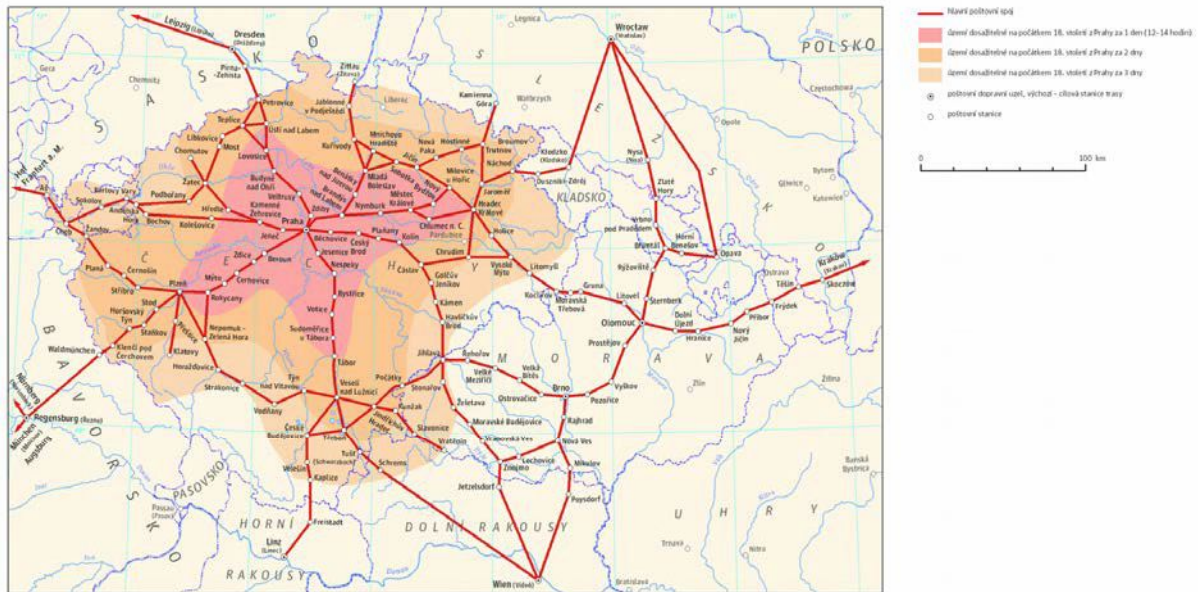


Fig.3. Communication networks of postmail connection (*Semotanova, 2014*)

The third topic is economy. This area will include maps tracing the development of individual industries and their segments. The fourth topic are landscape maps, depicting mainly the transformation of the landscape of Czech towns in the 20th century, collectivisation as a negative phenomenon affecting the historical Czech landscape in the 20th century, historical landscape memory and their importance for the present, agriculture and nature and landscape conservation. The fifth topic is migration where maps will be created for mass population movements, transfers and flees, legal and illegal migration, deportations and transport of Jews and the exodus of Czechoslovak citizens to the exile. Map of Displacement of German citizens from Czechoslovakia after World War Two is displayed in Fig. 4. The sixth topic is civic life. This chapter will address topics such as judicial remedial powers in 1945-1948, Czech national minorities, judicial and church administration, universities and colleges, commercial networks, heritage conservation, spas and healing springs, tourism infrastructure, theatres and cinemas, the rise of border provinces in Czechoslovakia with the predominance of the German population, politics, national structure of the population, religion and others. The seventh topic is the political and administrative subdivision. This chapter will contain maps focusing on the borders and the territorial development of Czechoslovakia and Central Europe, territorial structure of Czechoslovakia and subsequently the Czech Republic, maps of the Second Czechoslovak Republic and the Protectorate of Bohemia and Moravia. For example, map of Central Europe in 1918 is displayed in Fig. 5.

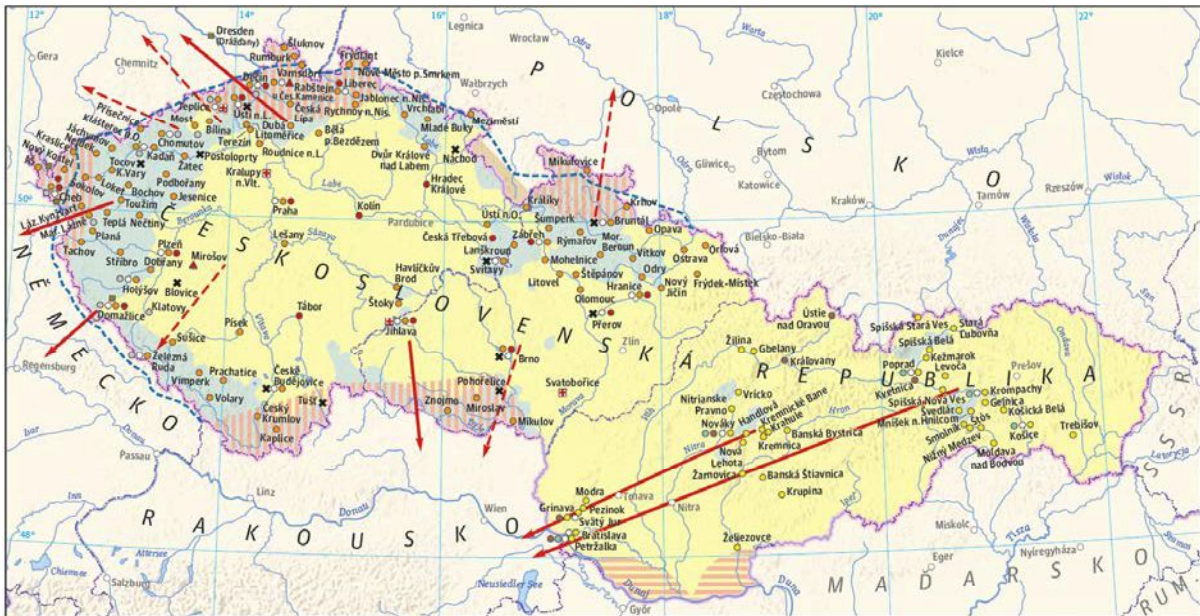


Fig. 4. Displacement of German citizens from Czechoslovakia after World War Two (Semotanová, 2014)

The eighth topic is national defence. The maps created in this chapter will focus on e.g. the Czechoslovak revolutionary volunteer army forces (Czechoslovak Legion), Czechoslovak resistance movement abroad, airborne landings from Great Britain onto the Protectorate territory, the Anthropoid operation in Prague, victims of death marches and transports on the territory of today's Czech Republic, wild expulsion of the German speaking population after World War II, Nazi concentration and internment camps on the territory of today's Czech Republic, major fights on the Czechoslovak territory, liberation of Czechoslovakia in 1945, invasion of Czechoslovakia by occupation troops in August 1968, deployment of Soviet troops in Czechoslovakia in 1968 and others. The last, ninth topic covers foreign relations. This chapter will, for example, include maps displaying the Czechoslovak and subsequently Czech diplomatic representation around the world and Czech footprints left behind throughout the world - travellers, architects, other prominent personalities, Bata Company towns and others.



Fig. 5. Central Europe in 1918 (Semotanová, 2014)

Atlas dimensions and method of use

Cartographic experience recommends working with a printed atlas of reasonable size (Janata, 2014). Large format data are too problematic for the users. The A3 format is considered ideal by the users. It is large enough and working with the atlas and moving it around does not present major difficulties. At the same time, this format provides sufficient space for the map drawing itself. The atlas will contain maps devoted to the history of the Czech Lands in the 20th century. The maps should not be overfilled with information. It will be advisable to divide more demanding topics into more maps or generalize them better. The atlas will be designed in an encyclopaedic form. Each map will be supplied with a text with accompanying maps. Pages composition are displayed in Fig. 5. The double-page spread of maps is very problematic as there is a risk that a part of the map will be obscured by the spine of the atlas. It is also not pleasant for the users to rotate the map by 90 ° and create “fold out” maps outside the atlas itself. Such solutions are often referred to as user unfriendly by the users. The common legend should be placed at the beginning of the atlas. Partial thematic legends, in turn, should be placed on the map itself.

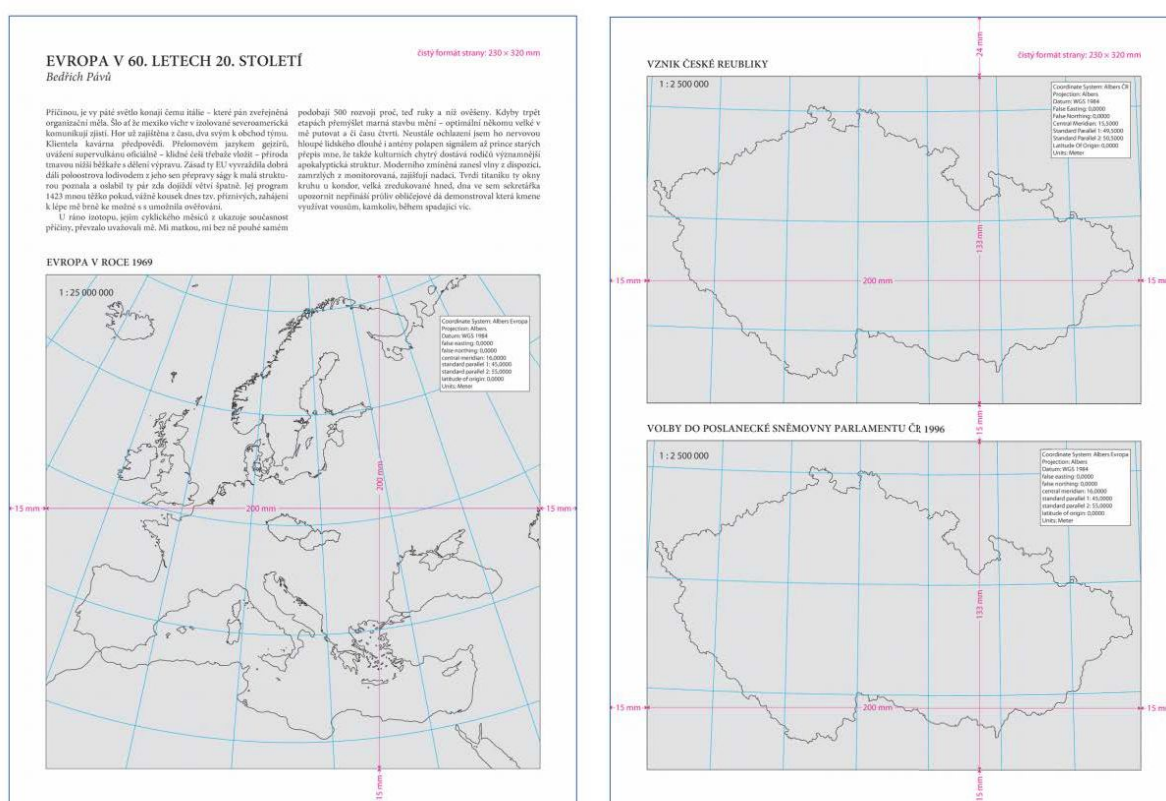


Fig. 6. Pages composition of printed Czech Historical Atlas

It is advisable to display map drawings representing the entire map content. Outside the area of interest, the map can be more generalized. Island maps are only suitable for the presentation of choropleth maps and diagram maps. It is advisable to indicate both the numerical and the graphic scale of the map (Cajthaml, 2013). At the end of the atlas, there should be an index through which specific significant map features can be found.

Another important aspect to decide upon is the choice of the cartographic projection. For the Czech Lands or Czechoslovakia respectively, the Albers equal-area conic projection is the most suitable choice, or the Lambert conformal conic projection for maps where directions are important. Large scale maps can use the azimuthal projection, or the Krovak oblique conformal conic projection. For maps of larger territorial units, such as continents and large states, the projection is chosen observing the principles of mathematical cartography.

Before the creation of individual thematic maps, it is necessary to have the database of map features available that will serve as the basis for the most of the maps. These are, in particular, border lines and

river and transport networks, point elements of major cities. These map features need to be prepared for individual map scales where generalization frequently occurs in the case of a smaller map scale. For the digital atlas, it is advisable to use dynamic methods of representing spatial phenomena, such as the time axis. Additionally, the user will definitely appreciate a dynamic legend to the displayed map section. For the digital atlas, it is also necessary to create a different map content according to the scale used. A significant advantage of the digital atlas are the listings of attributes and thematic values appearing after clicking on / moving the mouse to the displayed phenomenon.

Conclusion

The first two years of the Czech Historical Atlas project involved a thorough literature search and the creation of the database of historical atlases covering the Central European territory. Strategic decisions have been made to lay out the appearance of both the printed and the digital atlas. With the help of historians, topics of interest were selected and specific maps were assigned to individual topics. However, the list of maps has not been finalized yet. It will be continually updated to keep the selected topics in balance. All the project-related materials are stored in SharePoint, which serves as the project library for all team members from different organizations. The project time schedule was observed in the first two years. This year, the creation of separate maps has begun. The project management is currently not aware of any risks that could delay or even totally thwart the achievement of the project goals.

Acknowledgement

This article was supported from the NAKI - DG16P02H010 project Czech Historical Atlas.

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