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NEW FACTS ABOUT OLD MAPS OF THE TERRITORY OF THE FORMER CZECHOSLOVAKIA

MACKOVČIN, P., JUREK, M. (2015): *New facts about old maps of the territory of the former Czechoslovakia. Geografie, 120, No. 4, pp. 489–506.* – The authors have searched the archives for information concerning the large-scale mapping of Czechoslovakia in the period 1921–1950, when the improvement and updating of older maps inherited from the Austro-Hungarian Monarchy was carried out and new large-scale mapping was launched. Several map sets resulted from the mapping, yet they did not cover the whole territory of Czechoslovakia. Among the sets are: Czechoslovak revised topographical sections of the Austrian 3rd Military Survey, Czechoslovak preliminary maps in Beneš projection, Czechoslovak definitive maps in Křovák projection, German maps to the scale 1:25,000 called “Sonderausgabe” (Special Edition), “Karte des Sudetenlandes” (Map of Sudetenland), “Karte der Slowakei” (Map of Slovakia), and “Messtischblätter” surveyed during WWII. According to the authors’ research these maps covered 69.4% of the territory of Czechoslovakia as it was in 1938 and 75.6% of its territory in 1950. Surveying methods had improved over time and included the use of aerial photography.

KEY WORDS: topographical section – map revision – Beneš projection – Křovák projection – preliminary and definitive maps.

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1. Introduction

In public and private archives the authors found new information about the large-scale mapping of Czechoslovak territory in the period 1921–1950. These findings broaden our knowledge of old topographic maps of this part of Europe. Up to 1957, large-scale topographic map coverage of the newly formed Czechoslovakia (established in 1918) was based on map sheets from the Austrian 3rd Military Survey.

The Austrian Military Geographical Institute in Vienna carried out the 3rd Military Survey for the territory of the Czech lands in the years 1876–1880 (Boguszak, Císař 1961). In Slovakia, the mapping was accomplished in the years 1875–1883 (Kučař 1967).

The main result of the mapping was a set of basic maps to the scale 1:25,000 called topographic sections. They served as the basis for deriving maps of smaller scales (1:75,000 – called special maps; and 1:200,000 – called general maps). The reduced and downscaled content of cadastral maps was used for planimetry, supplemented in the field using the plane-table method. For

altimetry, a sparse network of precise levelling points was used, together with hachure and – for the first time in such a large cartographic work – contour lines (principal 100 m contour line for the whole state, 20 m for slopes inclined less than 25°, 10 m in lowlands with slopes inclined less than 10°).

Originals of topographic sections were produced in 11 colours. Planimetry, hachure and lettering were reproduced in black, trigonometric points, stone constructions and roads in red, river network, shores of lakes and fishponds and their water surfaces in light blue, meadows in green, pastures in yellow-green, orchards and gardens in blue-green, vineyards in yellow, borders of forests in dark green and forests in grey-green, contour lines and rocks in yellow-brown (Kuchař 1967).

Photolithographic copies of these maps were only printed in black-and-white, often not clearly reproduced and unreadable in areas of dense hachure. Both planimetry and altimetry were inaccurate according to present-day standards; the contour lines had an indicative character only. The original topographic sections carried a designation in Arabic numerals in their upper margin for identification of map zones (Zone) and a designation in Roman numerals for identification of map columns (Colonne).

Bessel ellipsoid served as the reference surface and Sanson-Flamsteed polyedric projection was chosen as the cartographic projection. Trigonometric points of Gusterberg (for Bohemia), Sankt Stephan (for Moravia and Silesia) and Gellértheyg (for Slovakia) were initial points of plane coordinate systems. The point of Santorio Pier (level of Adriatic Sea) in Trieste served as the zero for altimetry (Čapek 1985).

Sheets of special maps 1:75,000 were composed of four topographic sections. The topographic sections were downscaled photomechanically and set into a prepared frame of special maps. The Sanson-Flamsteed polyedric projection was also used for these maps.

Special maps formed the basis for general maps to the scale 1:200,000, published in the years 1887–1899 in accordance with instructions from 1886. The frame was prepared in a similar way to that of the special maps.

In 1919 the original coloured maps of the Austrian 3rd Military Survey of the territory of the new Czechoslovakia were conveyed from the Austrian Military Geographical Institute in Vienna to the Czechoslovak Ministry of Defence in Prague. Less than half of the original Austrian coloured map set that was taken to Prague has been preserved. The pressure of the imperial powers that resulted in the 1938 Munich Agreement led to the surrender of Czechoslovak borderlands to Germany and Hungary; later in 1939 the cartographic materials of those territories were also handed over. The cartographic materials were to be lent to Nazi Germany for 30 years, up to 1968. Germany gave the coloured topographic sections of the territory of the Subcarpathian Ukraine and of eastern and southern Slovakia to Hungary, and the remaining maps of the Slovak territory were given to Bratislava.

The original Austrian coloured map sets were used as the basis for the new Czechoslovak topographic service. For a long time (up to 1957 in practical terms) special maps were the only map set covering all Czechoslovak territory.

2. Material and methods

The authors searched public and private archives in Czechia and abroad for information about the large-scale mapping of Czechoslovakia in the period 1921–1950. Primarily the authors used materials obtained from the archive of the Military Geographical and Hydrometeorological Office in the town of Dobruška and from the Central Archive of Surveying and Cadastre in Prague, while also using materials from the map collection of the Geographical Institute of the Faculty of Science, Charles University in Prague, the map collection of the Geographical Institute of the Faculty of Science, Masaryk University in Brno, the Topographical Institute of Colonel Ján Lipský in the town of Banská Bystrica in Slovakia, the Geodetic and Cartographic Institute in Bratislava, and Staatsbibliothek zu Berlin. The research into the materials of the Czech Army was very useful. The authors also obtained information from private sources. All information collected was statistically processed with a focus on the evidence of the preserved old maps of the Czechoslovak Military Geographical Institute in Prague and its successors. Spatial coverage of old maps to the scale 1:25,000 from the period 1921–1950 was assessed and visualized using the geographic information systems (ArcGIS).

3. Results and discussion

3.1. Revision of maps of the Austrian 3rd Military Survey (1921–1938) and 1945

The Czechoslovak Military Geographical Institute in Prague launched a revision of the maps of the Austrian 3rd Military Survey shortly after obtaining the colour originals from the Austrian Military Geographical Institute in Vienna in 1919. The Czechoslovak cartographers used a new map legend published in 1921 for this revision (Boguszak, Císař 1961).

The authors appreciate the one-time correction and updating of objects on the map under the term map revision. The main changes were in the introduction of Czech and Slovak toponyms, the omission of hachure and the representation of relief by brown-colour contour lines (index contours 100 m, intermediate contours 20 m, supplementary contours 10, 5 and 2 m). The revised maps were printed in two colours, although certain sheets were printed with forests in green and bodies of water in blue.

The cartographers used reliable sources (after 1930 also aerial photographs) to improve planimetry and altimetry on the revised maps. Map sheets covering the area of 38,242 km² of Czechoslovak territory were revised up to 1934 (Boguszak, Císař 1961). The amount of marginal information on the revised maps gradually increased. Magnetic declination in the year of map edition was situated on the left side of the lower margin, the year of revision and the name of the publisher was placed in the centre of the lower margin and a scheme of the position of the sheet in relation to neighbouring sheets was situated on the right side of the lower margin. On maps published for civil use these pieces of information were omitted. After 1935, a one-kilometre map grid of the

The authors found that 8 topographic sections were revised in the years 1940–1944 and 4 sections in the years 1945–1953. The revision of four quarters of the topographic sections was carried out immediately after the capitulation of Germany in May 1945. Examples are found in the surveys to the south of the city of Brno (sections 4457/2a, 2b, 2c, 2d, 4357/3a, 3b, 3c, 3d, 4357/4a, 4c), to the west of the city of Brno (4356/4a, 4b, 4c, 4d) and to the west of the city of Prague (sections 4052a, 2b, 2c, 2d).

The last preserved revisions that have been found are from the beginning of the 1950s from the north of Moravia and Silesia (sections 4160/1a Fulnek, 4160/1b Studénka, 4160/1c Suchdol nad Odrou, 4160/1d Bartošovice, Kunín).

3.2. Preliminary military survey (Beneš projection) 1923–1933

Besides the revision of the topographic sections of the Austrian 3rd Military Survey, the Military Geographical Institute in Prague also launched the production of a new set of Czechoslovak medium-scale maps. These maps were intended to replace the Austrian maps used at that time. The new maps were based on a new mapping in Beneš normal conical projection onto the Bessel ellipsoid, with two undistorted parallels. The common laborious plane-table method was used during the survey. Map symbols were based upon the map legend from 1921, the mapping used a geodetic point field of the concurrently created Uniform Trigonometric Cadastral Network (JSTK) and downscaled planimetry from cadastral maps. The maps were printed in a preliminary edition in two colours (contour lines in brown, other content and map lettering in black) to the scales 1:10,000 (1923–1930) and 1:20,000 (1928–1933). The origin of the plane coordinate system was initially set at the intersection of meridian 35°45' E of Ferro and parallel 49°15' N, with a planar shift 1,000 km to the west and 500 km to the south. The longitude coordinates, marked in the map frame, were expressed east of the meridians of both Ferro and Greenwich.

The relief was represented by contour lines with a 2-metre interval on maps 1:10,000 and a 5-metre interval on maps 1:20,000. In certain cases contour lines with an interval of 2.5 m were used. The altimetry was expressed in the Adriatic system.

The map layout and numbering system was derived from the topographic sections of the 3rd Military Survey. Each topographic section of the 3rd Military Survey (a sheet to the scale 1:25,000 measured 7'30" in latitude and 15' in longitude) was divided into 4 sheets of the preliminary military survey to the scale 1:20,000 (3'45" in latitude and 7'30" in longitude). Map numbering was obtained with the addition of a letter to the map number of the corresponding topographic section (e.g. 4053/4-c). The subsequent division of the sheets of the preliminary military survey into quarters produced sheets to the scale 1:10,000 (1'52,5" in latitude and 3'45" in longitude). These maps were designated by the addition of an Arabic numeral from 1 to 4 to the map designation of the smaller scale (e.g. 4053/4-c-4). The legend was situated at the lower margin of the map surface. This mapping in Beneš projection was abandoned in 1933



Fig. 2 – Czechoslovak topographic maps to the scale 1:10,000 and 1:20,000 in Beneš projection (1923–1933) – so called preliminary mapping; 85 map sheets 1:10,000 + Milovice covering 14 standard map sheets 1:10,000; 42 map sheets 1:20,000

and is referred to as *preliminary* (*prozatímní* in Czech) in the descriptions of the history of mapping in Czechoslovakia.

The authors documented 85 map sheets to the scale 1:10,000 and 42 map sheets to the scale 1:20,000 (Fig. 2): the area mapped by 19 map sheets to the scale 1:20,000 was not mapped to the scale 1:10,000. Outside the map numbering system, the military training area of Milovice was mapped and maps of this area were published to the scales of 1:10,000 and 1:20,000 in various coloured editions (Kupčík 1976). Nine map sheets published to the scale 1:20,000 were preserved from the vicinity of the town Kremnice in Slovakia (mapped 1930–1933). The military training area in the Záhorská nížina lowland in the vicinity of Plavecký Mikuláš (Slovakia) was also mapped; unfortunately maps of this area have so far not been found. According to papers by Boguszak and Císař (1961) and Kupčík (1976), the preserved maps 1:10,000 cover an area of 1,394 km² in Czechia. Only Kupčík also mentions maps to the scale 1:20,000, covering an area of 2,527 km². According to the authors of this paper, the preserved map sheets in the scale 1:10,000 cover an area of 1,229 km² (Czechia) and sheets in the scale 1:20,000 cover an area of 2,367 km² (436 km² in Slovakia and 1,931 km² in Czechia, from that the military training area Milovice in Bohemia represents 220 km²). The differences between the data published by Boguszak and Císař (1961) and Kupčík (1976) and the new data, as indicated by the authors of this paper, stem from the fact that the authors found 3 published maps from central Slovakia (previously unknown) and delimited areas of surveying on 14 other sheets. The information about the 2nd edition of 38 sheets in Beneš projection is also new (6 sheets to the scale 1:20,000 and 32 sheets to the scale 1:10,000, especially from the Ostrava region).

The preserved maps in Beneš projection cover a total area of 3,008 km² (2.14% of Czechoslovak state territory in 1938). The total area takes into consideration the overlapping of map sheets, therefore the total area is smaller.

The authors also found a proof-print of a Special Map of the Czechoslovak Republic to the scale 1:50,000 in Beneš projection from the vicinity of Milovice, dated 1924.

3.3. Definitive military survey (Křovák projection) 1934–1938 and 1946–1949

On September 9, 1932 the Czechoslovak Ministry of Defence decided to abandon mapping in the Beneš projection and to launch a new form of mapping using the Křovák conformal conical projection in general position for army requirements. The Křovák projection provided for minimal deformation in lengths within the territory of Czechoslovakia. The Czechoslovak Ministry of Defence determined the size, layout and frame of map sheets in a decree of October 9, 1933 (Kupčík 1976).

The Křovák projection was officially introduced as a unified nation-wide projection intended for both civil and military use in Czechoslovakia by the Ministry of Finance in a decree of December 16, 1937, and became a component of the Datum of the Uniform Trigonometric Cadastral Network (S-JSTK). Mapping was launched in central Slovakia in the year 1934, using a new set of symbols (designated ZEM-III-3) for topographic maps of Czechoslovakia to the scale 1:20,000 and smaller scales (MNO 1935). Maps surveyed in the Beneš projection were updated and transformed into the Křovák projection. Unlike all previous topographic maps, whose frames were defined by sections of meridians and parallels, these new maps to the scale 1:20,000 (so called 5-centimetre maps) had their rectangular frame formed by lines parallel with the Y and X axes of a rectangular coordinate system derived from the Datum of the Uniform Trigonometric Cadastral Network (S-JSTK). The origin of the coordinate system was situated outside Czechoslovakia and was indicated by the coordinates $Y=0$ and $X=1,400$ km. It was also the starting point for the division of map sheets. All map sheets displayed the same-size area (8×10 km). Map sheet number was given by the rectangular coordinates Y, X of the north-east corner of the map frame, accompanied by the name of the largest settlement on the map, e.g. 710-976 Mimoň. One map sheet included 64 sheets of the cadastral map 1:2,000. The plane-table method was used for mapping to the scale 1:20,000. An experiment using aerial photographs for mapping was carried out successfully in the vicinity of Beckov in Slovakia in 1934. Aerial survey photographs covered 67,000 km² of the state territory of that time (MO 2008). Altimetry was constructed on a relatively dense field of 20–120 points per km² (Čapek 1985) or 15–100 points per km² (Kupčík 1976). Relief was demonstrated by spot heights and contour lines with the interval of 10 m (5 m and 2 m in lowland). Map sheets also contained other information for military use, e.g. strategic sources of potable water, fords, etc. Maps to the scale 1:20,000 were intended to be printed in four colours with waters in blue, forests green, contour lines brown, planimetry and lettering in black; on map sheets along

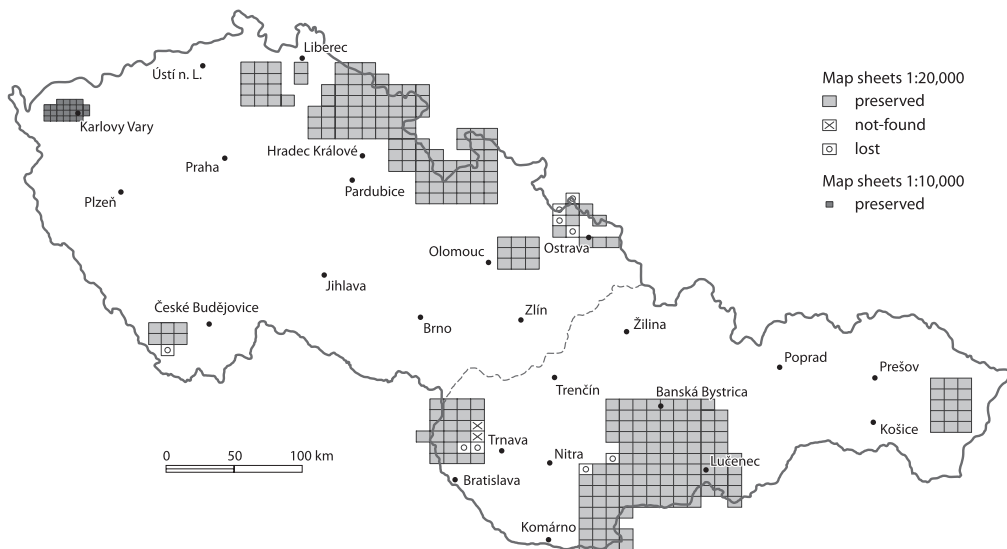


Fig. 3 – Czechoslovak topographic maps to the scale 1:20,000 in Křovák projection (1931–1949), 275 map sheets preserved, 9 lost and 2 not found, Karlovy Vary 1:10,000

the state border the borderline was to be enhanced in red. However, most of the map sheets were published in a preliminary form in two colours only. On maps of military training areas (e.g. Ralsko), their boundary was marked by a blue line (Ralsko) or a red line (Lešť) in the years 1946–1949.

Quantitative data about the number of published map sheets and the area mapped within the definitive military survey are very disparate in the published sources. Up to the end of 1938 a set of 117 map sheets to the scale 1:20,000 were in the process of elaboration, covering an area of 13,275 km² of Czechoslovak territory, mostly in the south of Slovakia (Boguszak, Císař 1961). According to Lauer mann (2009) an area of 10,750 km² was mapped towards the end of 1938. According to Klíma (1958) maps to the scale 1:20,000 in the Křovák projection were prepared in the years 1935–1939 for the territory of Slovakia in the areas of Malacky – Bratislava, Lučenec – Levice and Michalovce – Humenné and in Bohemia in the area of Jičín – Sněžka, covering a total area of 10,700 km². The same figure is stated by Miklošík (1997). According to Čapek (1985) definitive maps covered 10% of the Czechoslovak territory (as it was in 1938) and another 5% was presumably mapped in the years 1945–1949.

According to the book “History of the Geographical Service of the Army of the Czech Republic 1918–2008” (MO 2008) only 80 sheets were published up to 1938 from the total of 170 prepared sheets to the scale 1:20,000. According to Mikšovský, Šídlo (2001) this represents 7% of the state territory (Fig. 3).

As to the preserved map sheets of the so called five-centimetre map, Kupčík (1976) reports 87 sheets from the territory of Czechia and 113 map sheets from the territory of Slovakia from the period 1934–1938. Another 11 preserved map sheets from the Malé Karpaty mountains and 13 sheets from the lower

Hron river basin were printed after the Second World War according to Kupčík (1976), bringing the reported total of preserved map sheets for Slovakia to 137. However, information concerning the map sheets from the Malé Karpaty mountains and the lower Hron river basin requires correction: those sheets were already published by 1938. After the Second World War (up to 1949) mapping only continued in the territory of the present-day Czechia, particularly for economic reasons in the surroundings of the town of Karlovy Vary (mining area Sokolov) to the scale 1:10,000. According to the latest findings by Mackovčín (2012) 275 map sheets of the definitive survey to the scale 1:20,000 from the territory of Czechoslovakia have been preserved in various stages of completion (printed, on aluminium desks, photolithographic black-and-white copies, unfinished field originals) and colours (four colours, three colours, two colours and black-and-white copies). The mapping of Czechoslovakia to the scale 1:20,000 was finally discontinued in 1950.

In contrast to the above-mentioned data, the Czechoslovak Military Geographical Institute published many more sheets of an uncompleted set of the Map of the Czechoslovak Republic 1:20,000 (five-centimetre map) in the Křovák projection in the years 1934–1949. Kupčík (1976) found 222 sheets, while the authors of this paper found 285 sheets, contributing with the addition of map sheets from eastern Bohemia, northern Moravia and Silesia and western and central Slovakia. These maps were published during WWII by the Geographical Institute of the Ministry of the Interior under the name Map 1:20,000 (5-centimetre) for the purpose of conveying the cartographic material to Hungary and Slovakia in 1941.

3.4. German military maps of the Czechoslovak territory designated as “Sonderausgabe”

German military maps of the Czechoslovak territory to the scale 1:25,000 were prepared by the department of the German General Staff from 1936 (e.g. sheet 3757/1). The maps were based on the topographic sections of the Austrian 3rd Military Survey. Their size (format), layout and designation did not change and remained the same on German “Sonderausgabe” maps. The map producer also used the revised Czechoslovak special maps 1:75,000 upscaled to 1:25,000. The resulting maps were concise, but easily readable. Maps were printed in black and white. The one-kilometre Gauss-Krüger grid in 3° meridian strips was reprinted into topographic sections.

Maps contained a legend in German and Czech, information about magnetic declination, and a scheme of administrative division (Mackovčín 2012). Most of the map sheets were published in August and September 1938 within the series of scales 1:25,000, 1:75,000 and 1:200,000. The maps were published not only for the territory of Bohemia, Moravia and Silesia, but also for the territory of Slovakia. A total of 116 map sheets have been preserved to this day. In the same period the revised topographic sections of the Austrian 3rd Military Survey were also published (Fig. 4). Many of them were used by Germany for the delimitation and visualisation of the new boundaries of the Czech-Slovak Republic after the Munich Agreement of 1938.

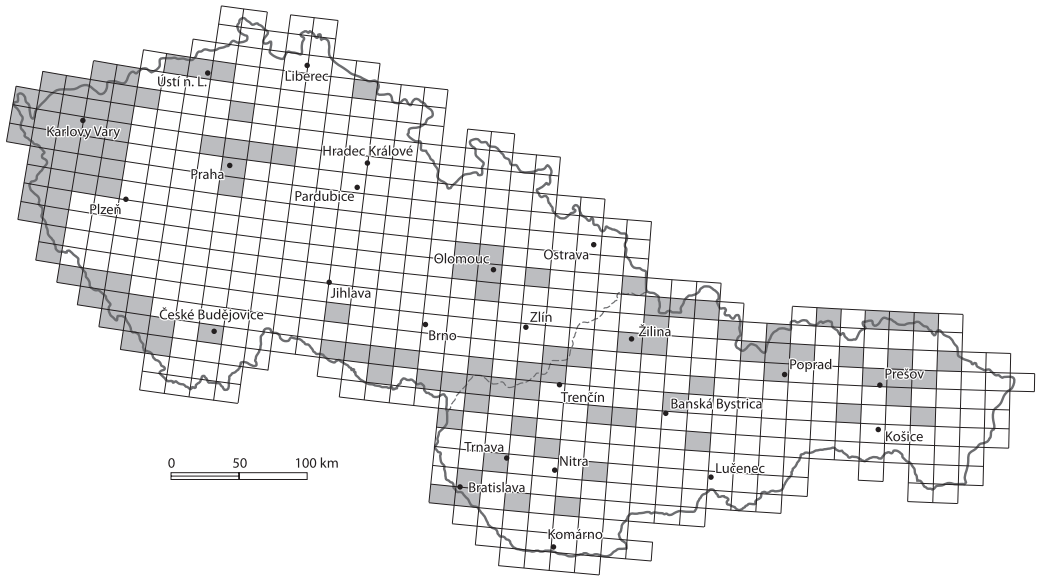


Fig. 4 – German maps to the scale 1:25,000 produced by rescaling of special maps 1:75,000, so called Sonderausgabe (1937–1945) – 123 map sheets produced (116 preserved)

Parts of the maps published by the German offices were supplemented with Czech and Slovak local names and published after the Second World War, in the years 1951–1953.

3.5. German military maps of occupied territories “Karte des Sudetenlandes” and Slovakia “Karte der Slowakei”

All topographic maps of areas occupied by Germany based on the Munich Agreement were transferred to German offices through an agreement between Czechoslovakia and Germany. Among others, colour originals of topographic sections 1:25,000 of the Austrian 3rd Military Survey were transferred. Those originals are probably lost. The revised maps prepared by the Czechoslovak Military Geographical Institute in Prague, topographic maps 1:10,000 and 1:20,000 in Beneš projection from the Ostrava region, topographic maps 1:20,000 from the Giant Mountains, special maps 1:75,000 and other cartographic materials were also transferred.

Germany published maps designed as “Karte des Sudetenlandes” (Map of Sudeten) 1:25,000 and printed in two colours in the years 1936–1944. From this map set 213 sheets have been preserved (Fig. 5) of a strip along the Czechoslovak-German border (area Ostrava – Děčín – Karlovy Vary – Plzeň – Břeclav – Bratislava) and along the occupation line V from October 1938. 8 map sheets from the south of Bohemia and 4 sheets from the south of Moravia are missing. This map set contained a total of 225 map sheets. The German legend was used in

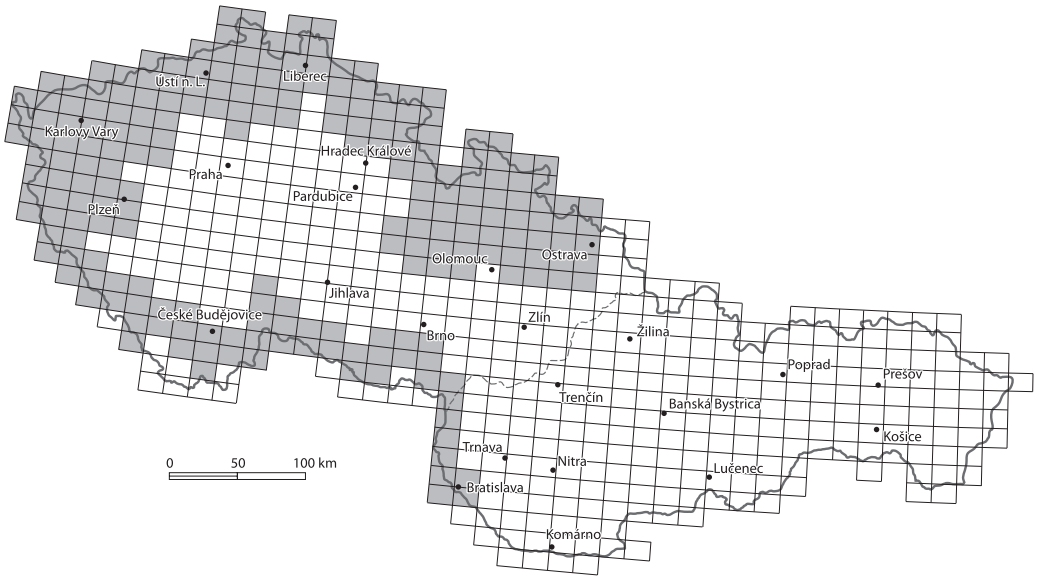


Fig. 5 – German topographic maps 1:25,000 “Karte des Sudetenlandes” (1936–1938)

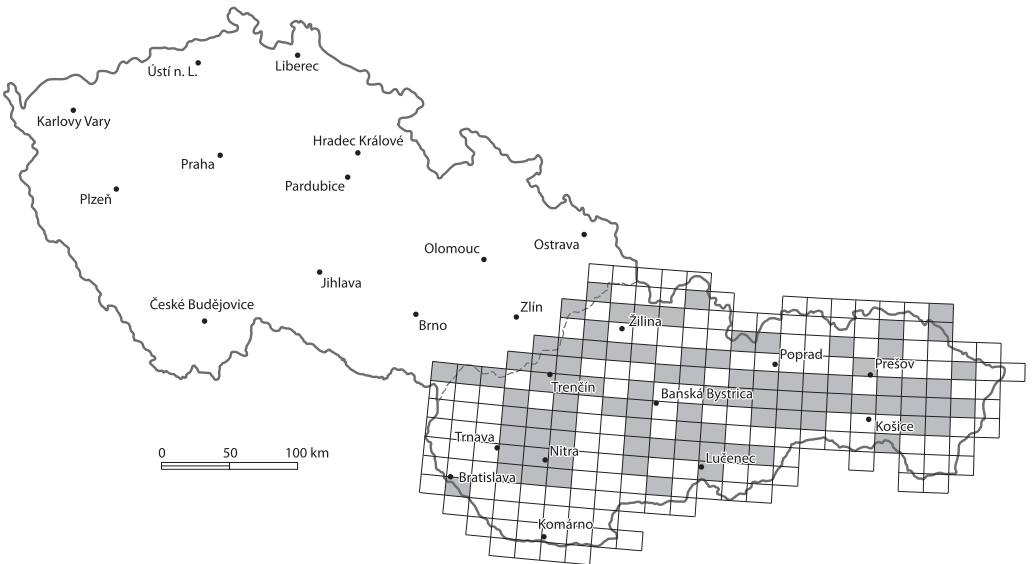


Fig. 6 – German topographic maps 1:25,000 “Karte der Slowakei” (1936–1941)

this map set. The one-kilometre Gauss-Krüger grid in cylindrical projection in a lateral position was reprinted onto topographic sections of the Austrian 3rd Military Survey.

Germany also prepared topographic sections of Slovakia to the scale 1:25,000, with relief represented by contour lines. The preparation of these maps started

in 1936 and after the proclamation of a new state on the territory of Slovakia in March 1939, publishing by German offices continued as “Karte der Slowakei”. The maps were produced by rescaling Czechoslovak special maps 1:75,000 to the scale 1:25,000. Maps were printed in two colours (contour lines brown, planimetry and lettering black). The legend was in German and Czech. 80 map sheets from the original total of 193 (41%) have been preserved in archives (Fig. 6). The authors newly discovered 6 more map sheets in the Staatsbibliothek zu Berlin.

3.6. Messtischblätter (4 cm map)

After the occupation of the rest of the Czech lands by Germany in March 1939, the preparation of topographic maps 1:25,000 was launched (Topographische Karte in German language). The first sheets of this map set of occupied Silesia and Moravia originated from a montage of Czechoslovak topographical maps in Beneš projection (e.g. sheet 6175 Hultschin). This process reduced the readability of the maps.

The preparation of a new map set in the so-called Protectorate of Bohemia and Moravia was launched in 1940. Maps were published with a German legend (so called Messtischblätter), in Gauss-Krüger cylindrical projection and in the shape of German maps from the pre-WWII period. Surveyors of the occupied Czechoslovak Military Geographical Institute in Prague also participated in the map survey.

Maps from the territory of Moravia were printed either in one colour (black or grey) or in two colours (planimetry and lettering in black or grey, 5-m contour



Fig. 7 – German maps 1:25,000, Messtischblätter of Moravia (4-cm-Karte; 1939–1945) – 138 map sheets

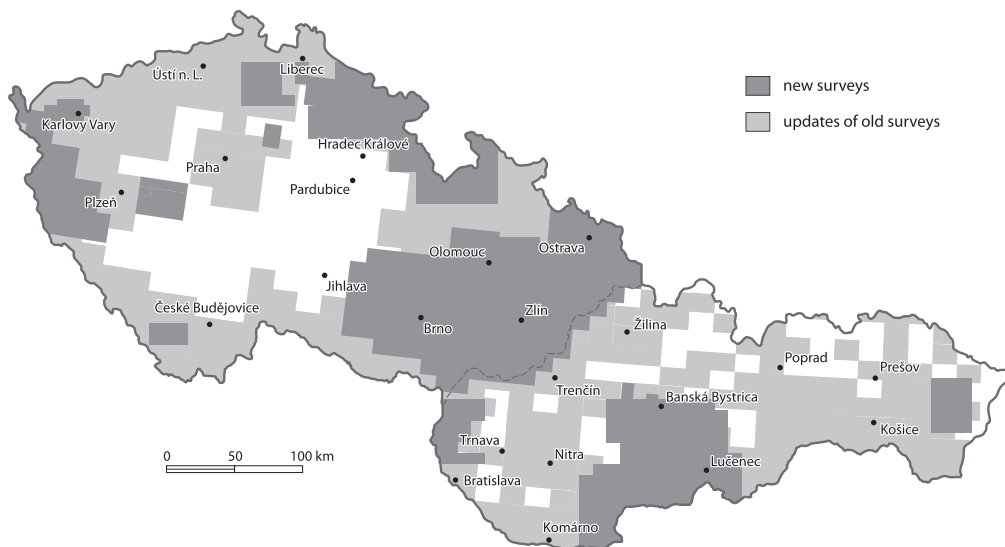


Fig. 9 – Coverage of Czechoslovakia by military topographic maps (1921–1949)

corresponding map titles were chosen, the legend was changed in comparison with ZEM-III. Maps were printed in four colours: forests in green, river network and water surfaces in blue, contour lines in brown, planimetry and lettering in black. The survey continued in 1950 in the territory of western Bohemia (from Aš to Domažlice). Outputs from the unfinished survey, designed as field originals, have been deposited in the archive of the Czechoslovak Military Geographical Institute – there is evidence of 67 sheets, from which 38 revision map manuscripts or their parts from the year 1952 have been preserved. No map was printed, but a map section for the enlargement of the airport of the town Cheb exists. Field originals were finished in 1952 and revision map manuscripts were prepared (Fig. 8). These revision map manuscripts were used as the basis for maps in a one-sixth division in the system S-52 used in the year 1952 that gradually covered the whole territory of Czechoslovakia in the years 1953–1956.

4. Conclusion

Czechoslovakia carried out map revisions of topographic sections in the years 1923–1928 in 200 complete sheets and 19 quarter sheets, from Liberec to Berehovo. According to the authors' findings a total of 85 map sheets to the scale 1:10,000 and 42 map sheets to the scale 1:20,000, both types in Beneš projection, have been preserved. Maps of military areas were not issued in a map numbering system. New archival research has raised the number of preserved map sheets in Křovák projection to the scale 1:20,000 to a total of 275 items for Czechoslovakia. It was only after World War II that maps of military areas were issued using a map numbering system.

For the occupied Czechoslovak areas Germany issued two-colour topographic sections to the scale 1:25,000, the so-called Map of the Sudetenland – “Karte des Sudetenlandes” (1936–1944). The authors have gathered a total of 213 preserved map sheets. For the area of Slovakia (1936–1941) maps to the scale 1:25,000 were issued, named “Karte der Slowakei”. From the theoretical total of 193 map sheets, only 80 have been preserved.

The newly discovered items reveal that within the German mapping survey (Messtischblatt) an area corresponding to 138 map sheets (18,540 km²) was mapped; a set of 127 map sheets (17,080 km²) was published. The years of printing of the maps of Messtischblätter for the area of Moravia range between 1942 and 1944. Published German maps outside the area of the Protectorate of Bohemia and Moravia are now subject to further research.

A complex combination of all the above-mentioned map sets has shown that up to the year 1949 they covered approximately 69.4% of the area of Czechoslovakia (as it was in 1938) and 75.6% of the area of Czechoslovakia in 1949 (Fig. 9).

It is remarkably valuable source material and it may provide details of the documentation of land use in Czechoslovakia in the first half of the 20th century. On May 23, 1950 the Ministry of National Defence decided that the elaboration and publication of the so-called preliminary maps for the whole area of Czechoslovakia would be carried out, to the scales 1:50,000 and 1:100,000 in the coordinate system of 1946 (S-46). These were finished in 1953, and maps to the scale 1:200,000 in the coordinate system of 1952 (S-52) were finished in 1955.

These incomplete sets of topographic maps document the area of Czechoslovakia before the collectivization of agriculture and the construction of large industrial areas. Therefore, the maps may be used for land use assessment in the first half of the 20th century (Demek et al. 2008; Mackovčín et al. 2011; Mackovčín, Slavík, Havlíček 2011) and for research into the geomorphological forms of relief (Létal 2005), including anthropogenic features (Kirchner, Smolová 2010; Smolová 2006).

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Sh r n u t í

NOVÉ POZNATKY O STARÝCH MAPÁCH Z ÚZEMÍ ČESKOSLOVENSKA

Autoři při výzkumech v archivech v Česku i v zahraničí rozšířili poznatky o souborech nedokončených topografických map z území Československa z období 1921–1950, jejich počet a územní pokrytí. U topografických map nově vzniklého československého státu se podařilo na základě studia v zahraničním archivu a soukromé sbírce rozšířit dosud publikované počty existujících mapových listů zpracovaných v polyedrickém zobrazení, Benešově zobrazení v měřítku 1 : 20 000 o 3 mapové listy ze středního Slovenska (4462/3-d, 4562/4-a, 4562/2-a). Materiál objevený ve VGHMŮř v Dobrušce umožnil vymezit práce v terénu na 15 mapových listech rovněž ze středního Slovenska. Novou informací je skutečnost o druhém přepracovaném vydání u 38 mapových listů v Benešově zobrazení, z nichž 6 listů bylo v měřítku 1 : 20 000 a 32 listů v měřítku 1 : 10 000, především ze severní Moravy a Slezska (okolí Ostravy a Opavy). Dohledán byl zkušební tisk Speciální mapy Republiky československé 1 : 50 000 v Benešově zobrazení z okolí Milovic z roku 1924. Z přehledu prací provedených v kuželovém zobrazení jsou rozšířeny poznatky o dvě nově mapovaná území na Berounsku (údolí řeky Berounky) a Jihlavsku (rudní revír).

Studiem archivních materiálů se mění rozsah topografických prací provedených Vojenským zeměpisným ústavem v Praze za období 1934–1949 v Křovákově zobrazení na mnohem větší počet mapových listů nekompletního souboru Mapa Československé republiky 1 : 20 000 (tzv. 5centimetrová mapa), než bylo doposud publikováno. Prokázala se existence dalších mapových listů z východních Čech, severní Moravy a Slezska, západního a především středního Slovenska. Publikované počty 5centimetrových map se rozšířily z 222 (Kupčák 1976) na 275 položek. Během druhé světové války byly tyto 5centimetrové mapy vydány Zeměpisným

ústavem ministerstva vnitra v Praze pod názvem Mapa 1 : 20 000 (5centimetrová) z důvodu předání kartografického materiálu Maďarsku (předáno 37 listů a dochováno 5 listů) a Slovensku (předáno 79 listů) v roce 1941. Autoři našli originál polohopisu Speciální mapy Republiky československé 1 : 50 000, tzv. 2centimetrové, ze Slezska (list 480–1056 Sudice). Z původně československého území na linii Banská Bystrica – Filakovo – Krupina byla část listů 2centimetrových map předána Německem v roce 1941 Maďarsku (2 originály) a Slovenskému státu (7 originálů). Po skončení války se osm z těchto devíti originálů nepodařilo dohledat nebo zajistit jejich kopie pro československou topografickou službu. Po skončení 2. světové války bylo mapováno v Křovákově zobrazení 1 : 20 000 pouze v Česku a také mimo užívaný klad mapových listů pro účely hospodářství okolí Karlových Varů (Falknov–Sokolov) v měřítku 1 : 10 000.

Vedle nových mapování v Křovákově a Benešově zobrazení Vojenský zeměpisný ústav v Praze aktualizoval (vytvářel reambulované) topografické sekce třetího vojenského mapování v československém pohraničí. K roku 1938 bylo dokončeno 200 sekcí celých, 19 čtvrtin sekcí. Autoři našli originály olejat 1/16 sekce, jejichž reambulaci prováděl i Zeměpisný ústav ministerstva vnitra protektorátu Čechy a Morava. Ihned po skončení války od června 1945 byly reambulovány sekce západně Prahy, jižně Brna a jihozápadně Ostravy.

Před a v průběhu druhé světové války byly vyrobeny z území Česka a Slovenska topografické sekce jako zvětšeniny speciálních map 1 : 75 000 nebo úpravou reambulovaných československých topografických sekcí. Vznikly takto tři soubory, u nichž autoři zjistili počty listů. Do vypuknutí války soubor s označením Sonderausgabe – dochováno 116 mapových listů. Po zřízení říšské župy Sudety soubor s označením Karte Sudetenlanden – dochováno 213 mapových listů. Pro Slovensko byl vyroben mapový soubor Karte Slowakei, z něhož v současnosti existuje 80 mapových listů (41 %). Kromě těchto map byly na základě nového mapování podle německého značkového klíče a kladu listů zhotoveny především z území Moravy říšské Topografické mapy 1 : 25 000 (4-cm-Karte) označované jako Messtischblatt. Práce provedené německou topografickou službou do dubna 1945 posloužily americké armádě k vytvoření mapových souborů v německém značkovém klíči i kladu listů s označením AMS 871 (rok vydání 1952). Z německých podkladů bylo vytvořeno 26 kusů Topografických map Geodézií a kartografií v Brně (1949–1950). Jejich rozsah se tím zvětšil především na jihu Moravy, kde se nepředpokládala jejich existence. Toto území mezi Znojmem a Lanžhotem bylo totiž součástí Říšské župy Alpské a Dunajské země. Stejně tak autoři rozšířili informace o mapových listech ze spolkových zemí Prusko, Sasko a částečně Bavorsko. Původně publikovaný počet 117 mapových listů (Škokanová, Havlíček 2010) byl autory navýšen na 213 mapových listů, které pokrývají území Česka.

V době zásadních změn v roce 1949–1950 o dalším směřování mapové tvorby bylo poměrně krátké období. V jeho průběhu se zpracovávaly mapy v měřítku 1 : 25 000 v Gaussově-Krögerově zobrazení (pětinové dělení listů). Nevyšly nikdy tiskem. Vytvořeno bylo 67 mapových listů ze západních Čech a severních Čech.

Všechny výše uvedené nekompletní mapové soubory pokryly vztaženo k roku 1950 téměř 80 % území tehdejšího Československa. Existuje předpoklad zpracovaných reambulovaných map z let 1940–1944. Naplnění tohoto podkladu by pak umožnilo vytvořit celostátní vrstvu „land use“ z let 1928–1950. Pak bude možné zkrátit poměrně dlouhou časovou osu mezi celostátními mapovými díly: III. rakouským vojenským mapováním (1876–1880) a mapami Generálního štábu ČSLA v systému S42 (1953–1957).

- Obr. 1 – Československé reambulované mapy v měřítku 1 : 25 000 (1921–1938) včetně map po roce 1945 – území českých zemí 138 mapových listů (z toho 1 list jen polovina), území Slovenska a Podkarpatské Rusi 71 celých mapových listů a 20 čtvrtin mapových listů
- Obr. 2 – Československé topografické mapy v měřítku 1 : 10 000 a 1 : 20 000 v Benešově zobrazení (1923–1933) – tzv. prozatímní mapování; 85 mapových listů 1 : 10 000 + Milovce o území 14 standardních mapových listů 1 : 10 000; 42 mapových listů 1 : 20 000
- Obr. 3 – Československé topografické mapy v měřítku 1 : 20 000 v Křovákově zobrazení (1931–1949) – 275 mapových listů zachováno, 9 ztraceno a 2 nenalezeny, Karlovy Vary 1 : 10 000

- Obr. 4 – Německé mapy v měřítku 1 : 25 000 vzniklé zvětšením speciálních map v měřítku 1 : 75 000, tzv. Sonderausgabe (1937–1945) – 123 mapových listů
- Obr. 5 – Německé topografické mapy 1 : 25 000 „Karte des Sudetenlandes“ (1936–1938)
- Obr. 6 – Německé topografické mapy 1 : 25 000 „Karte der Slowakei“ (1936–1941)
- Obr. 7 – Německé mapy v měřítku 1 : 25 000, Mestischblätter Moravy (4-cm-Karte; 1939–1945), 138 mapových listů
- Obr. 8 – Československé mapování (Gauss-Krügerovo zobrazení) v měřítku 1 : 25 000, plošné pokrytí polních prací a dochované revizní originály (1949)
- Obr. 9 – Pokrytí území Československa vojenskými topografickými mapami (1921–1949)

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