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METHODS OF RECOGNISING ROUTES OF CLOSED TRAM LINES IN THE CENTRE OF BĘDZIN ON THE BASIS OF FIELD RESEARCHES IN AN URBAN SPACE

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INTRODUCTION

Research subject covers methodical aspect of a recognition, on the basis of landscape and urban space changes, of transformation of a tram network in the centre of Będzin. Researches aim at pointing and describing the most significant methods used in geo-historical researches on a urban rail transport. Thus a spatial aspect has been assumed as a leading issue. Time scope covers the years of a tram mode which was functioning in the city (years 1928-2008). Due to the fact the crucial transformations have been made in the city centre, the researches are focused on this area.

METHODS OF GEO-HISTORICAL RESEARCHES ON A TRAM TRANSPORT

In geo-historical tram transport analyses two groups of coupled methods are used. These are preliminary study researches on various, characterized below, source materials and which are theoretical basis for a complementary and verifying field researches. During a research process such a data is often verified more than once, not only in source materials (particularly when interpretation problems occur), but also in the field.

Comprehensive literature studies however are carried out with a heuristic method (with a focus on an issue using as many available information about it as possible) and they aim at obtaining a maximum amount of various information

about urban transport in the considered time and space scope. For such purposes mostly the following sources are used:

- historical monographic documents (books, articles) dedicated to a city or region or researched transport issue,
- other papers including minor information (e.g. tour guides),
- bills and regulations (e.g. city council, local authorities, transport company management board)
- brochures, leaflets (e.g. timetables, advertisements), tickets,
- available photographic documentation (photos, postcards),
- topographic maps and city plans with a tram infrastructure or tram routes marked.
- press releases available in the area ,
- materials gathered in city archives, carrier's archives, museums and private collections.

The material obtained in that way requires a data arrangement and, if there is such a possibility, quality evaluation. There are no two identical cases and each network section should be treated individually. The material gathered is characterized by a different level of accuracy and thoroughness. Moreover there is a problem of data subjectivity and selectivity. During data arrangement many mistakes and inaccuracy may occur e.g. regarding street naming, dates, routes. Mistakes can be of a various nature e.g. printing errors or mistakes made by an author. Moreover a mistake once made can be repeated by the next authors.

Press notes, timetables, postcards and photos are peculiar and, at first sight, insignificant sources. The first one usually describes introduced, finished or planned investments as well as some circumstances which occurred. The second one may be a great source of knowledge about the connections in a node, passing places in a single-tracked section whereas in the postcards or photos a carriage or an infrastructure element, sometimes only in the background, can be found.

Continuation and confrontation of the results achieved in study researches take place during field researches. In such researches two methods are used: an observation and an interview. The researches are focused on investigating geographical space in search of any traces and information proving the existence of an urban rail transport. The results can confirm, correct or complement the knowledge gained hitherto or oppose it.

METHODS AND TECHNIQUES USED IN FIELD RESEARCHES

Building tram lines involves a necessity of providing permanent transformations of urban space, which would allow creating proper infrastructure. These changes are

usually based on introducing new elements to an urban landscape however they can also cover demolition of objects localized on the tram route or road system rebuilding.

Traffic suspended on the particular sections in a network does not mean that all elements of infrastructure will be liquidated automatically. Even its physical removal leaves some remains, which vanish as the time passes by. The differences can be easily noticed while comparing Będzin centre with the remains of closed line to Wojkowice. Each change in the landscape, even at first sight insignificant like e.g. tenement house renovation, impedes carrying out field researches. Very often, in such cases, the tram brackets or their remains are removed. Realization of considerable investment projects actually destroys all the existing remains of former tram routes.

The city landscape transforms gradually and systematically and the number of remaining elements can be treated as one of the fragmentary indicators of a level of transformation. The first to remove are objects clashing with a road traffic or able to be used in the other sections of a network. Sometimes removing the objects is provisional e.g. laying another layer of asphalt underneath which there is a track. This element can be disclosed during some road rebuilding, sewerage works or due to more ordinary reason like destroying bituminous surface by frost.

Therefore field researches are not confined only to comparing a current situation with the one in the historical photos, but they also try to monitor changes. In case of Będzin it refers mostly to demolitions or renovations of pre-war tenement house elevations during which remains of tram infrastructure are liquidated. In the photo no. 1 the reverse situation is presented when, due to giving up road works, a part of a track, launched in 1929, running from Małachowski street into Potocki street was disclosed. Tram track remains can be noticeable also in the road profile as it can be seen in case of Kościuszki street in Będzin, which lays beyond the area, where field researches are conducted. At the western side of the street, between a road and a pavement, a separated tram track used to run. Nowadays there is greenery.

Technique of cataloguing remaining infrastructure elements found in disused network sections is one of the most often used technique in field researches on the closed network sections. Material gathered in that way is later classified. During a selective space observation not only an ability to find such elements, but also their proper classification, is significant. Thus, without a proper theoretical background, conducting the researches is not possible and a lack of knowledge about the city will hamper proper result interpreting. Photos are a significant factor which becomes a source material and may help in a proper element classification.

Cataloguing is carried out in areas where a tram route was running. Taken into consideration should be not only routes determined during study researches, but also a directly surrounding area, where elements of infrastructure or its remains can be found as well¹.



Photo 1. Małachowski street and Moniuszki street crossing with a disclosed track section. *Source: by M. Rechłowicz.*

A level of transformations, which can take place while rebuilding transport system may be perfectly reflected by an example of rebuilding Kołłątaj Avenue, Małobądzka and Świerczewski streets into double roadways in the 70s, which was connected with building unusual crossroad of a C letter shape. As a result of rebuilding in years 1973-78 the most significant changes, not only in a tram network but also in a whole city landscape, took place. This investment formed a tram network in the shape it functions nowadays.

¹ Sewastopol is an example of a centre, where field researches revealed a tram infrastructure in the place, where according to official documents there was no such a transport functioning. The issue is wider described by M. Rechłowicz (2008).

The photos (photo 2) compare two views from a castle tower overlooking Syberka estate – one from the 60s and the other one present. Characteristic brewery buildings, in the place where nowadays there is a roundabout, can be seen.

An interview is the other method of gaining information while carrying out field researches. Such interviews can be conducted with the people, who lived in the particular area or worked in a company, which was exploiting infrastructure at that time. In both cases there is a possibility to reach unusual and unpublished information (circumstances) these people are familiar with. Due to time passing by and imperfect human memory such information can be very selective. It can also include unintentional distortion. Therefore this method should be treated as a complementary method, not as a main one.

Field researches and literature studies not always result in obtaining precise and complete information on the objects of a significant space width. Delimitation of spatial objects can be problematic. In case of line objects usual verbal information covered in publications is sufficient (e.g. list of the streets, where a particular tram line runs). In case of spatial objects using cartographic sources is necessary. In order to precisely determine a location (current Kołtataj Av.) of an old, liquidated in the 70s, tram depot, using maps from that period has been required.

STAGES OF A SPATIAL TRAM NETWORK DEVELOPMENT IN BĘDZIN

History of a tram transport in Będzin dates from 1926 with initiating a tram depot building, which was the first noticeable change in a city landscape connected with introducing into city space a new element – tramway. Previous projects and discussions on project issues did not exert such an influence. With launching in 1928 lines to Sosnowiec and Dąbrowa and in 1929 to Czeladź, 'Będzin tram node' was created. This node was modernized a few times in the following years. Building in the 50s line to Wojkowice via Grodziec revealed inefficiency of the system existing from the 20s. Further changes in a line system in the centre of Będzin took place in the 70s, which was related to rebuilding of a road system and building of a new depot. The rebuilding was completed in 1978 and sections launched a few years earlier were demolished.

Since that time spatial tram network system hasn't been significantly transformed. Only in 2006 traffic on the route to Wojkowice via Grodziec was closed. Particular stages of a spatial tram network development in Będzin have been presented in table 1. Historical routes of closed network sections against current transport system in Będzin are presented in fig. 1.

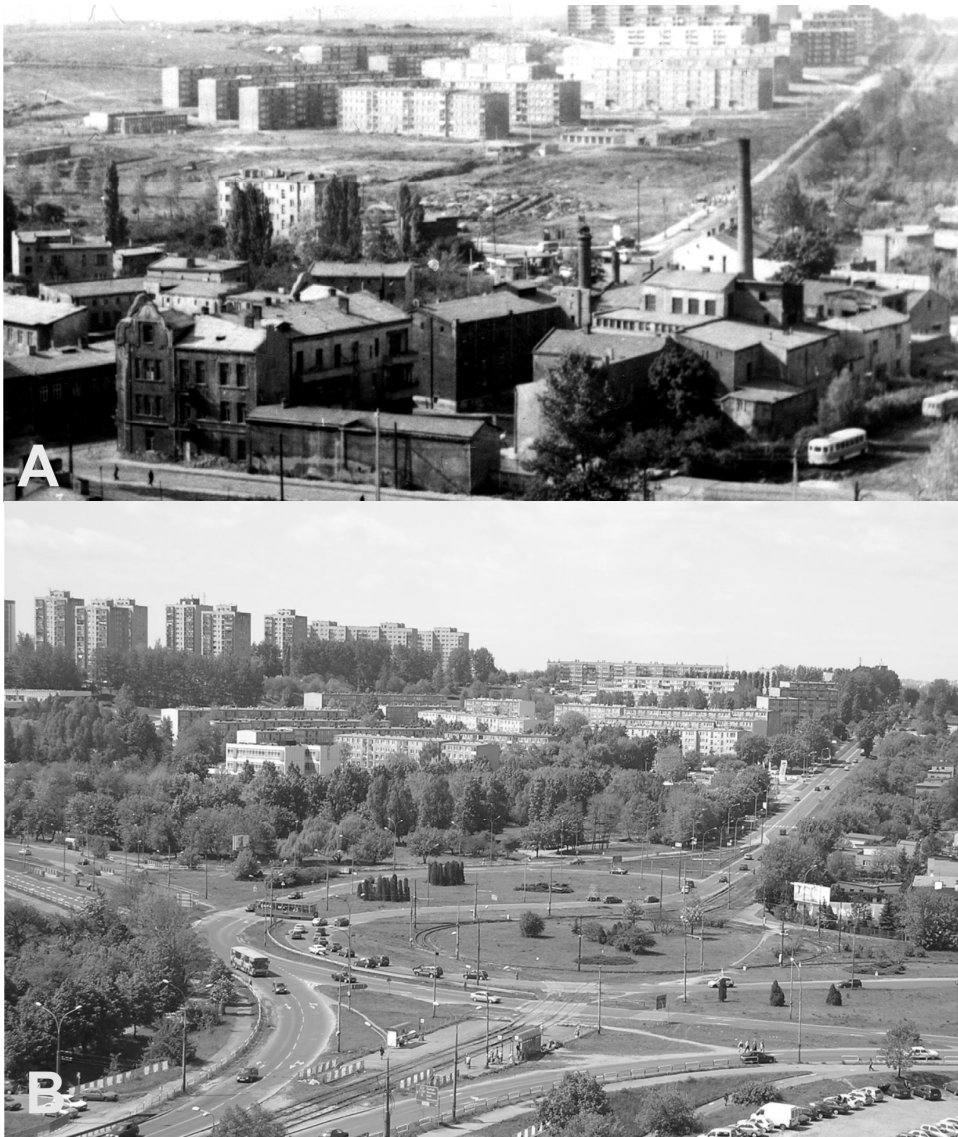


Photo 2. Two views from a castle tower overlooking Syberka estate: A-from the 60s (archives of Zagłębie Museum in Będzin), B-present view from a castle tower overlooking Syberka estate.
Source: by M. Rechłowicz.

Tab. 1. Stages of a spatial tram network development in Będzin.

Date	Characteristic of a change
18.01.1928	Initiating passenger traffic on the line Będzin – Sosnowiec
11.02.1928	Initiating passenger traffic on the line Będzin – Dąbrowa Górnicza
27.01.1929	Initiating passenger traffic on the line Będzin – Czeladź
22.01.1951	Initiating passenger traffic on the line Będzin – Grodziec
20.09.1958 ²	New track section on Zawale street (liquidating track on Moniuszko and Modrzejowska streets)
01.11.1964	New track section on Modrzejowska street
26.05.1978	New track section on Małobądzka street with tram roundabout at Czeladzka street (liquidating pre-war tracks from Słowiańska street to centre of Będzin)
21.07.1978	New track section on Kołłątaj avenue
31.03.2006	Suspending traffic in the section Będzin – Grodziec – Wojkowice
26.06 – 31.12.2006	Temporary traffic reopening on the shortened route Będzin – Grodziec

Source: own elaboration on the basis of: DZ, 1951; DZ, 1958; J. Galus, 1958; WZ, 1978a WZ, 1978b, K. Soida, 1998.

Cartographic sources presenting tram line routes or track infrastructure play an important role in the researches. For a historical recognition of a network shape meaning tram routes functioning before 1978, few available cartographic publications have been used. The research results have been presented in tab. 2.

Considering a state of research requires claiming that many aspects of the historical issues have been drawn up selectively. Furthermore studying source materials and research results presented in few publications does not fulfil a topic. Thus additional researches on the basis of existing source materials have been carried out. Due to disused elements of infrastructure remaining after previous tram routes, the field research method has been chosen.

In the centre of Będzin cataloguing of elements of tram infrastructure remaining in city landscape after transport network transformations was carried out. The cataloguing took place in December 2007. Space scope and research results have been presented in the attached map (figure 1). Additionally to cartographic presentation, photos (photo 1, photo 3), taken in the Małachowski street in Będzin in a different time periods, have been enclosed..

²Soida K. (1998) provides a later date – 21.09.1958.

Tab. 2. Maps presenting tram network in Będzin before 1978.

Year of edition	Map emblem	State of a network in years
1933	Pas 47 Słup 28 „Katowice”. Wojskowy Instytut Geograficzny, skala 1:100 000	1929–1951
1933	Pas 47 Słup 28 „Katowice”. Wojskowy Instytut Geograficzny, skala 1:25 000	1929–1951
1936	Plan Miasta Będzina. Wyd. Księgarnia i skład materiałów piśmiennych Adolfa Żmigroda	1928
1942	5680 „Laurahütte”. Topographische Karte 1:25 000	1929–1951
1960	Mapa topograficzna „Górnośląski Okręg Przemysłowy”. Zarząd Topograficzny Sztabu Generalnego Wojska Polskiego, skala 1:25 000	1951–1958
1965	Mapa topograficzna M-34-63-(5) „Będzin”. Główny Urząd Geodezji i Kartografii, skala 1:5 000	1958–1964
1970	Będzin – plan sytuacyjny (skala 1:1 000)	1964–1970

Source: own elaboration.

As a result of the researches the following tram infrastructure elements, located in the liquidated network sections, have been found: randomly disclosed short linking section covered by asphalt, 34 tram brackets of various types, 23 tram bracket remains of various types, few centimetre fragment of overhead post.

Remained tram bracket and previous way of ascending overhead with this bracket have been shown in the photos (photo 3) presenting Małachowski street from the side of Będzin Miasto railway station northwards. In the archival photo (photo 3A) overhead on the left is ascended to building walls, whereas on the right to overhead post. After liquidation of a track and unneeded posts, tram brackets localised only at the buildings on the western side of street seem to be an only remaining sign of tram existence (photo 3B).

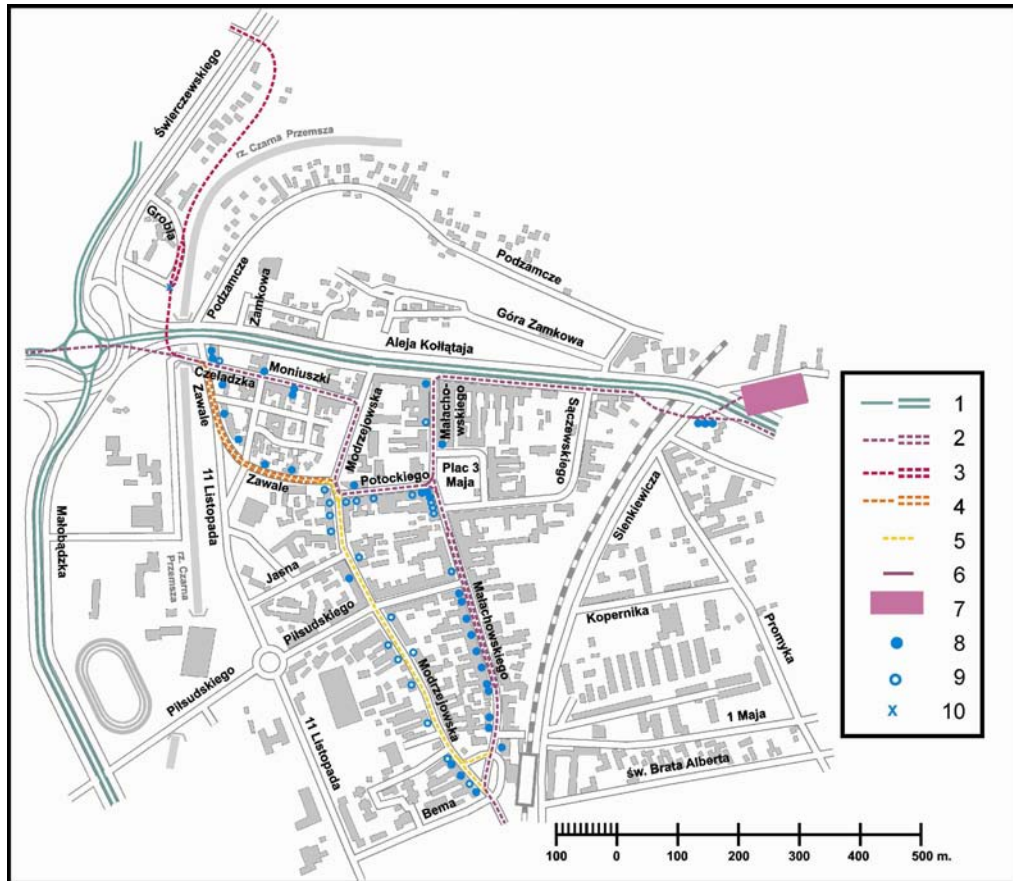


Fig. 1. Preserved elements of tram infrastructure in the closed network sections in the centre of Będzin. Key to symbols: 1-contemporary routing of tram lines via the centre (single and double track sections), 2-closed sections of the tram network (single and double track) – sections launched in 1928-1929 year, 3-closed sections of the tram network (single and double track) – sections launched in 1951, 4-closed sections of the tram network (single and double track) – sections launched in 1958, 5-closed sections of the tram network (single and double track) – sections launched in 1964, 6-preserved part of the track in the route, 7-localization of the tram depot in the years 1928-1978, 8-preserved remains of the overhead on the buildings – tram brackets (various types), 9-preserved remains of the overhead on the buildings – remains after tram brackets (various types), 10-other elements of infrastructure preserved in the area – element of the overhead post. *Source: own elaboration on the basis of topological map 'Będzin'..., 2001.*



Photo. 3. View of Małachowski street northward: A-archival photo with the noticeable overhead (from Zagłębie Museum in Będzin archives), B-current photo with remained tram bracket on the building wall
Source: by M. Rechlłowicz.

CONCLUSIONS

Study and field researches characterized in the paper are complementary, not competitive methods of recognizing liquidated tram line routes. They deliver complementary information. For a proper recognition using both methods is necessary as well as following a superior rule of gaining as much information as possible and searching as many sources as possible. Amount of information available to gather is a characteristic feature of each centre dependable on many complex factors. Number of centres, where such researches can be carried out, is relatively high. These are not only cities, where just single lines have been liquidated, but also cities, where tramway system has not been functioning for years. Researches carried out in the centre of Będzin are not innovative in Poland. Similar researches in the area of Wałbrzych have been carried out by B. Molecki (2006). During these researches liquidated tram and trolleybus infrastructure in the city has been catalogued with a focus on presenting results rather than on research methods. Scheme of the research presented in the paper is universal and does not require being adapted to local conditions.

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SUMMARY

Methodical aspect of reconstruction of tram line in the centre of Będzin and line towards Wojkowice, on the basis of landscape changes (in urban space), is the subject of the research. The research aims at indicating and describing the most important methods used in geographical – historical researches on functioning of the urban rail transportation.

The history of tram transport in Będzin begins in 1926 with the building of the first tram depot. By launching the lines to Sosnowiec and Dąbrowa in 1928 and to Czeladź in 1929 the “Będzin tram junction”, the subject of the research, was created and then a few times rebuilt. The building of the line to Wojkowice via Grodziec in the 50s revealed inefficiency of the system existing since the 20s. Thus six-year reconstruction process, however uncompleted, has been started. Next changes in the system of lines in the centre of Będzin took place in the 70s in connection with the rebuilding of the road net and building of the new depot. The routes had been launched a few years before having been liquidated. Since that time the spatial tram net system hasn't changed significantly however in 2006 the traffic on the route to Wojkowice was closed.

While assessing the current state of researches it is necessary to claim that many issues were treated fragmentarily and source material as well as publications on its basis are not complete and raise many doubts. Therefore additional researches on the basis of existing materials were necessary. Due to the remains of the previous routes of tram lines in the urban space in the form of disused elements of infrastructure, which help to specify data included in historical materials, the field method has been chosen.

The description of researches carried out in urban space includes: method of carrying out the field researches, conditions necessary for carrying them out, scope of information possible to obtain, ways of result verification, advantages and disadvantages of the method. Dependence of the method on many factors is its significant feature. The state of source materials enabling to organize the work in the area and determine the state of transformations is one of the most significant factors. Such analysis was carried out on the basis of centre of Będzin and line to Wojkowice.

During the researches disused elements of tram system infrastructure, which became the remains in the urban landscape after the historical transformations, were listed. The results of the researches were presented in the cartographical and photographic form. In conclusion part the application aspect (the amount of the new knowledge the researches bring in) as well as methodical aspect (the usefulness of the method and indicating methods helpful in carrying out researches connected with the history of urban rail transport) were assessed.