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Railway Traffic Regional in Silesia - history or the future

Abstract: Silesian Voivodeship is the most populated area in Poland, having a well-functioning road network and a dense rail network, which unfortunately is not sufficiently used due to low capacity due to poor technical condition (at medium speeds not exceeding 30 km/h for passenger traffic and 20 km/h for freight traffic). On the railway network in Silesia there is mixed traffic, ie. Commodity-passenger. Often freight traffic has priority over passenger traffic and a number of railway lines is greater % of occupancy. The article presents the historical regional railway, which was to be dedicated to only passenger traffics, as a movement dedicated on Silesia for such carriage. Unfortunately, for economic reasons and it seems that the political, this project has not been implemented, even though part of the design was made at 100% and part of the infrastructure at 30%.

Keywords: railway; construction; efficiency; conurbation

Introduction

The Silesian Voivodeship is the most important industrial region, located in the southern part of Poland. It is very well connected to the pan-european transport network. In his area intersect the main trans-european routes (corridor III: Berlin-Wroclaw-Katowice-Krakow-Lviv and corridor VI: Gdansk-Katowice-Zylina). The area of Voivodeship is inhabited by over more than 4.6 million inhabitants, which represents 12.14% of the Polish population The Silesian Voivodeship is the most urbanized area in the country. In 2012 Urbanization rate was 77.6%, compared to the country average 60.6% The region also has the highest concentration of the population in Poland and one of the largest in Europe. In 2012, the average population density was 374 people/km² and was the highest among all voivodeships. The Upper Silesian conurbation includes 23 towns The biggest of them are Katowice, Sosnowiec, Gliwice, Zabrze and Bytom.

Despite the well-organized road infrastructure, ie Highway A4, Diametrical Road Route are visible difficulties arising at the entrance and exit in the center of Katowice and other bigger cities, for example Gliwice, Sosnowiec, Dabrowa Gornicza, Czestochowa, Bielsko Biala. In recent years created many concepts to improve communication and the development of public transport in Silesia, taking into account the needs and expectations of society. The problem of liquidity communication concerns the center of many cities in the agglomeration of Silesia. The optimal solution seems to consider the possibility of returning to an already far advanced Regional Railways Traffic.

The basis of communication almost all large urban agglomerations is fast communication rail with _ subway standards It is always a kind of a frame on which are based other means of transport: buses, trams, individual automotive (through a system of parking lots) This is a typical communication system for the larger population centers, it is characterized by very high throughput of passengers and simplicity of the system. Such a system minimizes the amount of transfers and significantly accelerates the movement in the urban area. It effectively improves the quality of life in the city. Without such a system of public transport passenger gets lost among the hundreds of bus lines and dozens of tram trips last terribly long, and public transport loses enormously on the meaning. People massively choose more convenient, simpler and faster individually automotive. The result is a noise,

pollution, huge energy. The unique economic position of Silesian conurbation and her industrialization generates special transportation needs.

As all human gatherings and places of work are distant each other quite significantly, the cost of transport in this conurbation are particularly high. Planners noticed it quite late, designing new settlements with energy-efficient transport infrastructure. An example is the city of Tychy and the local system of trolleybuses and buses and partially completed on a portion of the line 179 (Myslowice - Kosztowy - Tychy) modernized section of Tychy - Ice rink, ie. Stops: Tychy rink (in km 28.989), Tychy Grota Roweckiego (in km 28.721), Tychy Al. Bielska (in km 28.292), Tychy Zachodnie (in km 27.787) and Tychy (in km 25.439).

History of the rise the Regional Movement Railways (formerly KRR concept)

First attempts to improve mass communication in Silesia have been made in the 80s - the twentieth century, when after years of studies and researches began to make plans for lines Regional Movement Railways, commonly called "Silesian subway." Then planned, that line will be created separate, two-way system on the route Dabrowa Gornicza - Katowice - Gliwice - Pyskowice City, with a branch to Huta Katowice. Total length - 73 km. The carrying capacity was to be eventually 42 thousand passengers per hour in the one direction. The time space between trains was eventually amount to two and a half minutes. On the route KRR located 43 Stops, which were to reach local, mostly transverse, tram and bus lines. Construction of "Silesian subway" was divided into three stages. In the first stage - that is until 1998 planned to switch a road section with a length of 46 km, with 27 stops from the station Katowice - Bogucice, Station Gliwice - Pyskowice City. Another part of Dabrowa Gornicza and Zabkowice with a branch to Huta Katowice (27 km long, 16 stops), had to be ready in 2003. For the realization of this important urban project it was necessary to take a decision on the removal or reconstruction of about 1,740 objects colliding with the route KRR, including viaducts, bridges, tunnels, passageways watersewage lines, gas pipelines and heatlines. The works were take up to 1993, funded by PKP on major overhauls.

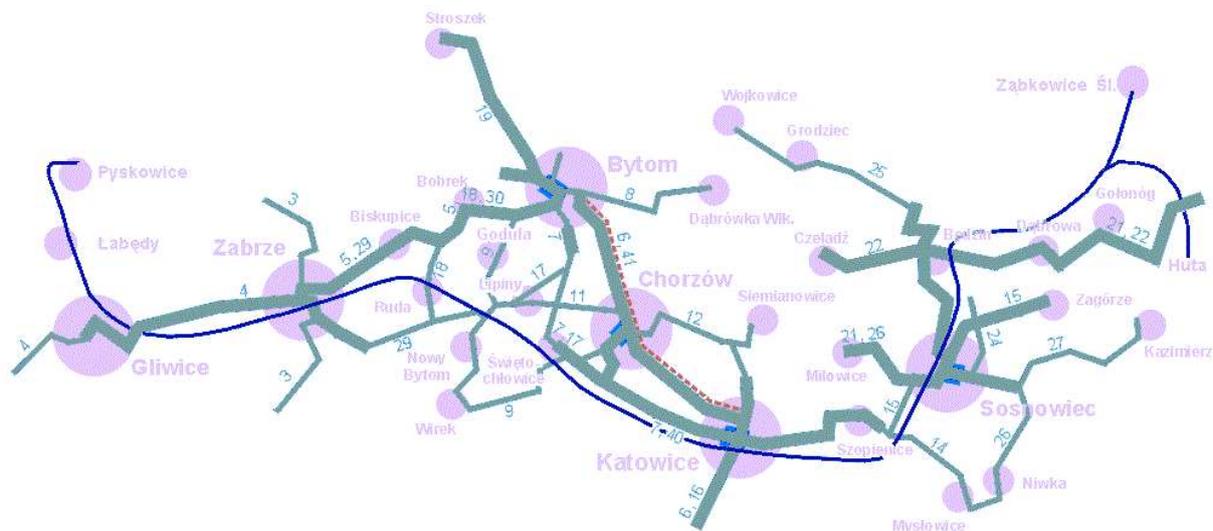
Design work on the modern system of collective Communications for Area of Upper Silesia began quite early. Due to the presence of mining damages Never been considered subway Technology, focuses on terrestrial networks Railway. Most developed concepts included two lines of fast urban railway: leading from east to west line connecting Pyskowice, Gliwice, Zabrze, rude, Swietochlowice, Chorzow, Katowice, Sosnowiec, Bedzin and Dabrowa Gornicza.

That was the most important part of the project, representing the entire axis diametrical Industrial District, residing at any rate by almost four million people. The second line was to connect Tarnowskie Gory, Bytom, Chorzow, Katowice and Tychy. These lines were to run parallel to the existing railway lines. These would be separate line of pairs of tracks exactly on the same principle as the Fast City Railway in Tricity. And it was even earlier idea, from 1972, SKR (Silesian Regional Railways), based on the concept of a line drawn on the completely new track (somewhere in North from the saucer in Katowice). Except that this project was going to be 2-3 times more expensive from the KRR. The first works started in 1987, their completion is planned for 2002.

The Fast Urban Railway system had run in the 4.00-23.00 / 0.00, at night along the KRR were to run buses. Each stop was to be associated with other means of transport (bus, tram, P+R), also assumed a common tariff of the WPK, taxi and parking fee (P+R). The axial distance from the other tracks would probably amount to 6m, platforms were to be higher than in the Polish National Railways (flush with the floor of wagons - above 100 cm) - wagons were to not possess steps (the camp was intended to build on the basis of EN57).

Tracks KRR were not interbreed with any other routes - were supposed to be completely collision-free. Used rails were to be reduced by a coefficient of abrasion - v average 40km/h, v max 90km/h, considered the increase to 110km/h.

Of course, traffic along the route was intended to control the computer from a central control room in Pyskowice and support from the control room in Zabkowice. The leg to Pyskowice Town was to be a single-track (or tracks would follow adaptation PNR), an arm of Huta Katowice probably double track KRR had to run by Katowice from Szopienice to so called free tracks on the north, and farther south side of track.



1. I line of Regional Movement Railway, Source: <http://katedr.republika.pl>

1.1 List of planned stops

start Pyskowice Miasto (adaptation of PNR trucks) Pyskowice Gł.
 Gliwice Czechowice
 G. Kuźnica
 G. Łabędy
 G. Kopernika
 G. Śliwki
 G. Gł.
 G. Zabrska
 G. Zatorze
 G. Sośnica
 Zabrze Maciejów
 Z. Stadion
 Z. Gł.
 Ruda Śl. Zachodnia
 R. Śl.
 R. Śl. Gł.
 R. Śl. Chebzie
 R. Śl. Drogowa Trasa Średnic.
 Świętochłowice Huta Florian
 Świętochłowice Centrum

K. Śródmieście
 K. Paderewskiego
 K. Bogucice
 K. Szopienice
 K. Morawa
 Sosnowiec
 S. Pogoń
 S. Środula
 Będzin Gł.
 B. Góra Zamkowa
 B. Ksawera
 Dąbrowa Górnicza Centrum
 D.G. Poniatowskiego
 D.G. Smugi
 D.G. Gołonóg
 D.G. Pogoria
 D.G. Zabkowice.
 an additional branch from D.G. Pogoria:
 D.G. Huta Katowice Brama Gł.
 D.G. Huta Katowice Brama 44.
 K. Huta Baildon

Chorzów Batory
Ch. Gałeczki
Katowice Os. Witosza

K. Centrum

KRR expected integration with the Regional Enterprise of Communication (communication bus and tram) in the use of strings cross to the railway route. Stops KRR were to form the multi-purpose interchange hubs connected with the station, bus station, carriage labor and "parking private cars." Predicted location of the stores in the vicinity of bus stops. KRR system had to work continuously for 20 h / day with 4h maintenance interval. In the event of an emergency closure of one of the tracks would be possible to carry traffic using the wrong track (beat 20 min.).

Traffic control by the Traffic Control Centre in Katowice. KRR had to have their own technical facilities for routine repair and maintenance of rolling stock. Main repairs were supposed to be carried out by the existing railway facilities.

Technical characteristics of KRR

Operating Length: 42.3 / 27.3 / 69.6 km

The target number of stops 27/16/43, with that of the island platforms 23/25/48

Distance between stops:

-minimum 1000/1000/1000 m

-low to middle 1627/1820/1657 m

-a maximal 3428/3992/3992 m

The number of base stations:

- main: 1 / - / 1

- auxiliary: 1/1/2, three sections of the route (intertrack 4m between tracks KRR, 8m between KRR and the station and 4 m between railway tracks)

Plans for realization:

section I - Pyskowice - K-ce Bogucice divided into tasks 0 and had to be implemented in years:

rump. 0 (disarmament route) 1986-1993

rump. I (construction route) 1991-1998

section II - K-ce Bogucice - D.G Zabkowice and D. G. Huta Kat. implemented in the years 1996, 2002.

The total investment cost (in 1994 prices):

task I 0 - 19.3 billion zł

task I - 49 billion zł

Task II - 38.6 billion zł

This cost also included the equipment facilities and purchase of rolling stock.

Financing of the planned investments

For the financial support of the said project in 1994 established a foundation under the name of Upper Silesian Regional Railway, based in Katowice. Its aim was to improve passenger transport system in the region of the Upper Silesia and the improvement of environmental protection. Foundation assets accounted for the then 4.5 billion zł. The founders of the foundation were representatives of the voivode, the control station and the representatives of the major cities of the Silesian agglomeration. After the change of regime in 1998 began to appear problems with financing projects. The decisive was letter of General Director of railway in July 22, 1991 of a decision to immobilize in the current year the task of the first stage of construction KRR in the GOP. In the years 1991 - 1997 took the state of suspension

the construction of the KRR - mentioned only correspondence between the Voivode of Katowice and the Minister of Transport and Maritime Affairs, and between the Silesian DOKP and the General Directorate of PKP. The final decision to suspend all funding for the construction KRR was made by General Director of PKP.

Selected examples of urban railways in Poland

The Pomeranian Metropolitan Railway

The main objective of the project Pomeranian Metropolitan Railway was to create an efficient public transport system, thereby enabling faster Access residents and tourists to the sub-region Kashubia and increase economic - social region. In August of 2005 Developed the first plans for the construction of railways in the metropolitan Tricity, as an alternative to car traffic. In May of 2007 was created a pre-feasibility study in July 2008 project went on the List of Key Projects of the Operational Programme Infrastructure and Environment, and the feasibility study of the project was established in December 2009.

In May 2013 Pomeranian Metropolitan Railway Company entered into a contract for the design and construction of the planned line, which included a two-pronged line 248, monorail connective No. 253, 8 passenger stops, station technical at the bus stop Gdansk Rebiechowo, Local Control Center at the bus stop Gdansk Matarnia, rail viaducts and road underpasses, footbridges, culverts and passages for animals and traffic Control System ERTMS. Realization of the program of the Pomeranian Metropolitan Railway made it possible to raise the level of social and economic the Pomeranian Province through the implementation of integrated public transport system Tricity Metropolis, a regional rail system. Program range is covered mainly the area of of Tricity agglomeration and adjoining counties.

Functional characteristics of the project of the Pomeranian Metropolitan Railway is a large potential for transport, high efficiency and reduction of travel time from the city centers to objectives by keeping traffic off a congested street system. The primary purpose of the construction of the line No.248 was to provide convenient transport to the airport and better connected counties Kartuski and Koscierski with Tricity. Starting line PKM was an important step to significantly improve public transport in the region. The construction of the railway line No.248 Wrzeszcz Gdansk - Gdansk Osowa completed and put into use in 2015., Passenger traffic was launched on 1 September 2015.

Engineering objects on the railway line 248: At line 248, and connective No. 253 there are 41 engineering objects: 17 railway viaducts, road overpasses 5, 4 foot bridges and 15 culverts and go under the tracks. The largest engineering is a wharf at Gdansk airport numbering up to 940 meters. All these objects were made as ferro-concrete structures, with the exception of the viaduct WK2 over the line No. 202 in the vicinity of the bus stop Gdańsk Zaspą, which has a steel structure.

Fast Railway in Tricity

In Pomerania also operates successfully earlier historically communication line Fast City Railway Tricity (SKMT). The first Main line of Gdańsk Main - Gdańsk Main New Port has already been initiated in the 50s of the twentieth century. In 1952. Was incorporated into motion the second line: Main Gdańsk Main - Sopot, then these lines were extended and modernized. Currently, there are lines: Tczew - Gdańsk Main Main, Gdańsk Main Downtown- Słupsk, Gdańsk Main Wrzeszcz - Gdańsk Main Airport - Gdynia Main, Gdańsk Main Main - Gdańsk Main Airport - Kartuzy, Gdynia Main - Kościerzyna, Main Gdańsk Main - Gdańsk Main Stadion Expo. Pomeranian provincial government under the "Mobile Pomerania" planned for the 2014-2020 period the purchase of 34 trains and assistance in the modernization of 21 trains for SKM.

Conclusion

Will Silesia gets wait to high-speed rail?

The specificity of the spatial development of Upper Silesia, where several towns creates a conurbation, made up of several towns located close to each other, complementary in terms of functional and associated extensive network of road and rail transport makes the self-realization of tasks in the field of public transport by the individual cities is impossible. Therefore it became expedient to create a connection of communication based on an agreement between the municipalities located in the area of the conurbation.

KZK GOP organizes public transport in the municipalities belonging to him together with the neighboring towns that do not belong to the association. The territorial scope of entities affiliated to the relationship shown in the figure below.



2. The territorial scope of KZK GOP, *Source:Projekt Planu Transportowego Województwa Śląskiego, 2015 r.*

In some regions of the country with a similar or even lower concentration of the population, and thus the more intensity of passenger rail traffic regional is popular and tends to his development. Silesia can not wait to KRR and the rail link to the airport in Pyrzowice, the highest altitude in Poland and one of the largest in the country in terms in numbers of passenger service. It would be advisable to consider the possibility of the use made in the eighties of the twentieth century projects of Railways Traffic Regional and analyze bought land and expertise of existing engineering objects in Phase I, section Katowice - Gliwice - Pyskowice. Another alternative may be to use the existing railway lines No. 1 in the section Dąbrowa Gornicza – Katowice, No. 138 Katowice - Oswiecim, No.139 on the section Katowice - Bielsko-Biala.

Source materials

[1] <http://katedr.republika.pl>

[2] Projekt Planu Transportowego Województwa Śląskiego, 2015 r.

[3] Przegląd budowlany 8/1988