Magdalena Ożóg

Tramways in Polish cities

Poland is an interesting case of the Central European country in which tram-based systems were long considered as an obsolete urban transport means. Well-developed tram networks have been operating in 27 agglomerations and cities. But till the late 1980, development plans focused on new metros in 12 of these cities, which in turn led to the neglect of existing systems. These plans were obviously unrealistic because of low financial capacity of the government, not to mention that traffic volumes were far below metro thresholds. Only one project – metro in Warsaw – has been implemented. However, even in this case metro construction has been very slow.

Tramway systems are serving 27 cities and urban agglomerations. The total length of the network is over 900 km and over 3600 trams operating on it. Generally, since trams were not considered as an efficient and effective transport mode many cities were considering switching to much more expensive metros. Things changed in the second half of the last decade, when several cities started considering upgrading of existing tramway systems.

A look to the back

On the area of present Poland the first line of horse tramway was initiated in 1896 in Warsaw and its route went between railway stations. In 1873 the first horse tramway was introduced in Gdańsk, in 1877 in Wrocław and in 1879 in Szczecin. Through the next years other Polish cities launched horse tramways whereas Kostrzyn was the last city which opened the net of trams this type.

First electric trams appeared in Wrocław’s streets in 1893 but the first trams in The Kingdom of Poland were in Łódź.

The vast majority of tram lines in Poland are double – track ones. Single – track sections are operated only in Katowice and Łódź agglomerations. In these agglomerations, the tram network covers many neighboring cities (Katowice – 15, Łódź – 4).

Nowadays the most extensive tram network is on the area of the upper Silesian Industrial District. The primitive network of the upper Silesia trams with steam traction and unique gauge 785 mm came into existence by efforts of Oberschelesische Dampfstrassenbahnen company in 1894. In 1896 Katowice and Siemianowice Śląskie were included into the network, which was finally electrified in 1898. Moreover in the beginning of the XX century 1435 mm width tracks were built in Katowice and Bytom. In the interwar period a process of standardization and linking network begun (narrow width tracks – 785 mm were being replaced by normal width tracks – 1435 mm). The last narrow width tram line was rebuilt in 1952 (line 12).

The youngest tram network in Poland came to existence in Częstochowa in 1952.

Most of the tram network in Poland has a track width of 1435 mm but with 1000-mm-wide tracks are also operated in Łódź, Bydgoszcz, Toruń and Grudziądz. A considerable share of tracks embedded in the roadway is characteristic of Polish cities, especially in the city centres. Warsaw is an exception with almost all the lines running on separated tracks.

After a prosperous period of establishing tram transport in the cities towards the end of the 19th century, in the decades which followed a gradual extension to the suburbs of the fast-developing cities took place. The second period of intensive development of tram transport in Poland were the 1950s. Rebuilding the country after wartime destruction, the full job activation of the society, the eradication of unemployment and the low level of individual car ownership led to an enormous demand for public transport in the cities. This decade also saw the reconstruction and integrating of the various tram networks.

Moreover, after the wartime, tram systems in bigger cities were rebuilt and modernized. At the same time older and less functional tram networks in smaller cities were exterminated. According to the policy of Polish United Worker’s party which
assumed leaving and modernising tram networks only in big cities, tram systems in average – sized cities were liquidated. However in many big cities tram networks were also reduced.

Since the 80' 20th century many cities in the world has been going back to the communication system containing trams as more efficient, cheaper in operation and more ecological than a bus means of transport. The supremacy of the underground and fast light railway has been decreased at the moment of implementing low floor tram types.

The end of the 20th century, however, was characterised by stagnation and even the liquidation of a number of lines. In the 1990s, the biggest losses were sustained in the Łódź region, where two long suburban commuter lines, as well as part of the urban line were closed down. At the same time, however, in Poznań, Warsaw, Cracow and Elbląg new line sections were built.

### General data of tramways networks in Polish cities

<table>
<thead>
<tr>
<th>City</th>
<th>Length of network</th>
<th>Date of open the first line</th>
<th>Number of lines</th>
<th>Number of vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Katowice</td>
<td>202.5</td>
<td>1898</td>
<td>31</td>
<td>347</td>
</tr>
<tr>
<td>Łódź</td>
<td>152.0*</td>
<td>1898</td>
<td>19</td>
<td>508</td>
</tr>
<tr>
<td>Warszawa</td>
<td>124.0</td>
<td>1908</td>
<td>28</td>
<td>876</td>
</tr>
<tr>
<td>Wrocław</td>
<td>84.2</td>
<td>1893</td>
<td>22</td>
<td>410</td>
</tr>
<tr>
<td>Kraków</td>
<td>84.0</td>
<td>1901</td>
<td>26</td>
<td>434</td>
</tr>
<tr>
<td>Poznań</td>
<td>65.6</td>
<td>1898</td>
<td>19</td>
<td>336</td>
</tr>
<tr>
<td>Gdańsk</td>
<td>52.6</td>
<td>1896</td>
<td>11</td>
<td>216</td>
</tr>
<tr>
<td>Szczecin</td>
<td>46.5</td>
<td>1897</td>
<td>13</td>
<td>206</td>
</tr>
<tr>
<td>Bydgoszcz</td>
<td>29.0*</td>
<td>1896</td>
<td>8</td>
<td>117</td>
</tr>
<tr>
<td>Toruń</td>
<td>22.0*</td>
<td>1899</td>
<td>5</td>
<td>55</td>
</tr>
<tr>
<td>Elbląg</td>
<td>16.7</td>
<td>1895</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td>Grudziąt</td>
<td>9.6*</td>
<td>1899</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Częstochowa</td>
<td>8.5</td>
<td>1959</td>
<td>1</td>
<td>48</td>
</tr>
<tr>
<td>Gorzów</td>
<td>12.2</td>
<td>1899</td>
<td>5</td>
<td>40</td>
</tr>
</tbody>
</table>

1) The network beside Katowice covers also cities Będzin, Bytom, Chorzów, Czeladź, Dąbrowa, Gliwice, Mostowice, Piekary, Ruda, Slonimowice, Sosnowiec, Świętochłowice, Węgliniec, Zabrze

2) The network beside Łódź covers also cities Konstantynów, Łutomiersk, Ostrów, Pawiąz, Zgierz

* 1000mm gauge tracks

Source IGKM

### A look to the future

In a fortunate manner there are plenty of exceptions. Several big cities have been conducting comprehensive modernization of tracks and tram stock and building new tram lines.
and the majority task of bus lines became delivering passengers to tram network. The most famous Poznań’s investment is PST (Poznań’s Fast Tram) which is a 6.1 km stretch of grade – separated tram line. It’s track is set in a cutting or on overpass, switches allowing to drive on adjacent tracks. It was created as an alternative to a more expensive metro. It was opened in 1997 and it links the densely populated northern districts of the city centre. As the program had proved successful, another extension of network started in 2005, which will connect the city with eastern high-rise districts. The success of the program has prompted the authorities to convert existing line into faster one. Moreover there are plans to buy 40 – 60 new trams for Poznań.

Another city Kraków begun implementing a huge investment of Kraków Fast Tram (KST) in 1991 and now, in 2008, it will be finally finished. The total route of Kraków Fast Tram covers 12 km, of which 1.4 km will run in tunnel, 5.9 km will be new tracks and the rest is a modernized existing infrastructure. In 1997 MPK Kraków started purchasing 26 new low floor trams (NGT6 – Bombardier) and during the period X 2007 – IV 2008 another 24 trams (NGT6/I) were bought. New trams can already operate on the second segment on the fast tram. There are also plans to purchase other 7 trams (N8S – NF) and next NGT6 or NGT8 type trams.

In Warsaw and Gdańsk tram networks are being systematically modernised. Furthermore in Warsaw it is planned to build a new tram line and above all the bids have been invited to deliver 186 low floor trams till 2013. It would be one of the greatest in history auction for delivering rolling stock in Europe.

Gdańsk still doesn’t lag behind to other cities. In the end of 2007 3 new low floor trams (NGT6 – Bombardier) started operating in urban communication. What is more, in 2007 an agreement between ZKM Gdańsk and DSW21 Company was signed, which object is purchasing 44 new trams (N8C) in 2008 – 2010.

It is worth to recal one of the most important tram investments in Poland – Regional Tram Project in Łódź. This means 10 new low flow trams (122N Pesa), 29 km of new track which leads to provide passengers faster and more comfortable transport. More ever local authorities study the possibility to refurbish suburban tramway network.

In Wrocław municipal authorities also plan to extend tramway network and plan in the next year to buy 28 new trams.

Perspectives of urban public tram transport in Poland are now being clarified. Great efforts of transport organizers, service providers (operators) and financial possibilities (European Structural Funds) has brought visible improvements in quality and productivity.
ENIKA Ltd.
Industrial Electronics

We have been supplying professional electronic equipment for rolling stock since 1992

**Rail rolling stock**
Static converters
Air conditioners
Hand dryers
Supplying units
Testing units

**Trams and trolleybuses**
Asynchronous drives
Static converters
Air conditioners
Heating units
Rectifier units
Supplying units
Testing units

Working with ENIKA Ltd. is guarantee of:
High quality
Modern technical solutions
Prompt delivery
Professional service

ENIKA - RELIABLE PARTNER IN TRACTION ELECTRONICS

ENIKA Sp. z o. o. Zakład Elektroniki Przemysłowej
ul. Morgowa 11, 91-223 Łódź, Poland, tel.: +48 42 652 15 55, fax.: +48 42 652 16 11, e-mail: enika@enika.pl, www.enika.pl