

T2M 2018 MONTREAL CONFERENCE - BOOM, BUST AND WHAT AFTER: THE LIVES OF HUB CITIES AND THEIR NETWORKS

THE ROLE OF TRAMWAYS IN THE USSR AND THE GDR IN THE 1950-1960s: UNDERSTANDING THE CONFLICTS AND PRIORITIES

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Dresden Wiener Platz, 1969. Source: Dresden Verkehrsbetriebe archive



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1950s-1960s - road and pedestrian traffic, urban rationalization, tramway infrastructure maintenance, reconstruction, elimination, substitution, development

- Conflicts due to special spatial necessities in the organization of tramway traffic
 - Flexibility of tramway infrastructure in urban design solutions
 - Selective and irregular interventions in tramway network planning
- Different visions in transport economy, importance of mass public transport and importance of car infrastructure development
 - Postwar reconstruction urgency and necessity to create consolidated and comprehensive socialist urban and transport planning principles

Why did tramway planning vary and when did the tram have priority?

How did the tram network adapt to the new urban traffic conditions?

What criteria were applied in decisions on the selection of urban public transport?

How can be explained the differences in tramway planning between GDR and the USSR?

HYPOTHESIS AND OBJECTIVES

Interest to study GDR and the USSR:

- similarities in transport and urban planning politics, USSR influences
- differences in transport planning cultures and tramway infrastructure preexistences

- The role of tramway infrastructure planning was more important in GDR than in the USSR

- in the USSR the politic to leave tramway lines only in a very loaded direction
 - removal of tramway lines in the central zone, in some residential zones substitution with buses and trolleybuses
- in the GDR there was a policy to preserve and reconstruct existing tramway lines, to replace in exceptional cases with buses (the passenger traffic is low, not planned urban extension in the future)

Objectives:

- Understand tramway planning ideas, criteria and principles in both countries
 - Explain conflicts and priorities in land urban public transport planning

II. THE DEVELOPMENT OF TRAMS IN THE USSR AND GERMANY BEFORE WWII

1. GDR - 1910s and 1920s

Coordination between tramway infrastructure and urban planning

Municipalization and centralization

Concentrated urban development and consolidated tramway network

Necessity of provision of accessibility for workers, industrial and economic development

2. USSR, 1910s and 1920s - lack of clarity in public transport development

Electrified tramway still was not extensively developed

1930s - Initial period of industrialization and urbanization

Tramway as a cheap solution for industrial cities and big cities,
not a generalised practice

3. Shared ideas: - The conflicts between tramway and motorised traffic **started to be questioned**

- Buses and trolley buses **not extensively developed**

- Tramways importance **in industrial cities**

Discussions about the spatial conflicts between tramway and road traffic in Germany and the USSR

Which is the principal mode of (land) urban public transport?

1. O. Blum, H. Potthoff., C. Risch «Strassenbahn und Omnibus im Stadttinnern» 1942

Evaluation (**technical, social, economic short and long term**) of buses and tramways

- Similar technical characteristics, short term economic effects
- Priority in long-term investment and social impact of public transport

2. Tramways for cities 80.000 to 1 mln (Zil'bertal', 1937, p. 234)

- Priority of tramway infrastructure development

Western studies about the conflicts of tramways with road traffic

- Henry Watson, 1938 and his influences on soviet experience

3. V. K. Petrov and V. G. Sosyantz, «Urban Transport», 1939

Tramways were not advantageous in the centres
can be substituted by intensive operation of buses and trolleybuses

- **to connect periphery with the centre**
- **periphery with periphery**
- **periphery with last metro stations**

III. COMPETITION IN THE TECHNOLOGICAL DEVELOPMENT OF TRAMS, BUSES AND TROLLEYBUSES: CONDITIONAL RECOGNITION OF TRAMWAYS

A period of initiatives to develop technical characteristics of urban public transport
(tramways, buses, trolleybuses)

Similar technical characteristics (speed and capacity)
- differences in the decisions to develop necessary infrastructure

Conventional tram had two solutions:
- maintenance of the existing tram infrastructure with improvements with larger capacities
- replacement with buses and trolleybuses

Mid - 1960s - Problems with urban public transport:
City growth, poor bus and trolleybus functioning and limit
in passenger capacity, trip time increasing

Potential for growth in passenger capacity in tramways and
limits in buses and trolleybuses

IV. THE GROWING CAR TRAFFIC: THE FIRST IDEAS ABOUT TRAMWAY CONFLICTS WITH ROAD TRAFFIC IN THE POST-WAR PERIOD

Differences in the dimension of cities with tramway infrastructure

GDR 150.000 - 700.000 inhabitants (Deutsche Bauacademie, 1954, p. 163)

USSR 600.000 - 800.000 inhabitants (Stramentov., Fishelson, 1963, p. 32)

CIAM, Moscow 1958 - «Reconstruction and construction of cities in 1945-1957»

in GDR report the use of conventional trams in cities 80.000- 300.000 inhabitants

for cities 300.000 - 750.000 inhabitants fast trams (Abrosimov, 1958, p. 12)

Volume of passengers - 5,000-14,000 passengers where the tram was the main urban transport (Kruger, Richter, Stuhr, 1961, p. 212).

The USSR report - the importance of trams was not mentioned

reduction of tram lines from 85.6% in 1940 to 43.6% in 1956, with bus use growing to 35.4% (Abrosimov, 1958, p. 28-29)

5,000 - 15,000 people/hour intensive use of buses and trolleybuses,

15.000 - 20.000 person/hour rapid tramway

Simplified and urgent understanding of urban transport questions in the USSR

Selection criteria of public transport mode:

1. in GDR (and FRG) based on **established and consolidated concept of transport modes' combination**, bus - tramway, bus - metro
2. «...in case of the USSR **it is not necessary to blindly follow the concepts established as «tram-bus»**, it is necessary to combine the modes of transport in order to arrive at rational and sequential solutions.

Therefore, solutions should depend on the following principles:

1. the capacity of the flows should be related to the transport capacity;
2. the transport speed in the main directions should depend on the shape and size of the city (the duration of the journey should not exceed 30-40 minutes);
3. during the choice between two or three competitive modes of transport, the mode that **is most economical and has the least influence on the existing urban situation** should be chosen»

(Stramentov., Fishelson, Gorodskoe Dvijenie, 1963, p. 34-35)

V. THE GROWING PUSH OF MOTORISED TRANSPORT IN THE EARLY 1960s AND THE DEVELOPMENT OF IDEAS ON THE REPLACEMENT OF TRAMS

Importance of public transport: Public transport was a very powerful instrument in the **improvement of the economic conditions of the socialist system**, but it had to be interrelated not only with the centres of production and consumption of the territories, but also with the functionality of the urban space
- a symbol of collectivity and of socialism

Intermediate or shared solution - buses and trolleybuses (shared infrastructure, fluid traffic, rationality, modernity, etc)

Importance of car and road infrastructure:

- Modern image of the city - «**Socialist city is a symbol of progressivity**»
 - Engineering logic in transport infrastructure planning «**More is better**»
- Rationality in city functioning and **preoccupation for growing road traffic**

in the 1960s the USSR continued with similar tendencies
in the development of public transport:
*«Principles of Soviet Town Planning» 1966 -1969, I volume
Central Research and Project Institute for Urban Planning*

Conventional tram not mentioned, priority in developing buses, monorails and urban trains

In the GDR tramways still preserved its importance
In the GDR cities between 50,000 and 700,000 inhabitants,
there had to be a combination of trams and buses (*Deutsche Bauacademie,
«Stadtzentren. Beitrage zur Umgestaltung und Neuplanung» 1967, p. 84*)

**Unsuccessful idea to replace tramways with urban rail
the intention to compact and combine mass passenger traffic in rail transport**

What is the future of conventional trams in the 1970s?

USSR - 1. Buses to rapid tramway

(Sheinyuk, «Skorostnoi Tramwai», Moskva, 1971, p. 4)

GDR - 2. Tramways to rapid tramways or trains (Glissmeyer, «Der städtische Verkehr –
eine Schwerpunktaufgabe für Forschung und Praxis», Die Strasse, 10, 1970, p. 68-69)

VI. THE VARIOUS SOLUTIONS TO THE CONFLICTS: THE ROLE OF TRAMWAYS IN URBAN STRUCTURE AND DESIGN

1. Heterogeneous traffic problem - Tramways in intersections

Vertical separation in exceptional cases (rapid trams)

Horizontal separation of traffic:

- Classifying tramway traffic and lines before entering the main intersection
 - Separated intersections
 - The need to preserve visibility for urban transport, tramways and pedestrians
- Influence on urban design and space

2. The city centre and tramways -

- Tramways not only to provide connections with the rest of the city, but also **to provide service within the city centre** (Deutsche Bauacademie, 1967, p. 83-84)
- Tramways in the periphery of the centre, **only buses and trolleybuses inside the centre**
(modern image of principal socialist centre without outdated tramways)

VII. CONCLUSIONS: SECONDARY PRIORITIES AND UNIDIRECTIONAL CONFLICTS

1. In GDR - The intention for preservation **of coherent and continuous tramway network**
In the USSR - Random changes and elimination of tram lines **without considering overall tramway network functioning**
2. Mass passenger traffic **only for rapid and mass transport modes** (rail track transport)
Mass passenger traffic could be **sustained by intensive bus and trolleybus functioning**
3. The difference between GDR and the USSR in the tramway infrastructure planning could be explained by **different transport planning logic in transport economy** and **different cultures in transport planning** (ideas and criteria for transport planning from the previous period)
4. In the USSR as in GDR strong preference to develop road infrastructure, but in GDR also strong preference to maintain tramway **as main urban public transport mode**

Socialist transport planning was not so homogeneous, it presented diversity in transport solutions



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