

**Ivana OLIVKOVÁ**

Technical university of Ostrava, Faculty of Civil Engineering, Institute of Transport  
17.listopadu 15, 708 33 Ostrava – Poruba, Czech Republic  
*Corresponding author.* E-mail: ivana.olivkova@vsb.cz

## **PUBLIC TRANSPORT IN CZECH REPUBLIC**

**Summary.** This paper presents actual public transport problems in Czech Republic. In all public transport systems the strong passenger decline occurs during the observed time. That means the passenger choose another transport mode and mainly car. It is important to deal with public transport with the aim to ensure a competitive one, because from the society point of view public transport represents the lowest cost and environment friendly transport system.

## **PUBLICZNY ZBIOROWY TRANSPORT OSOBOWY W REPUBLICIE CZESKIEJ**

**Streszczenie.** Artykuł się zajmuje aktualną problematyką w publicznym zbiorowym transporcie osobowym w Republice Czeskiej. We wszystkich systemach publicznego zbiorowego transportu osobowego dochodzi w ciągu rozważanego okresu czasu do znacznego obniżenia ilości przewiezionych osób. To znaczy, że potencjalny klient co raz to częściej wybiera inny sposób transportu, zwłaszcza samochód. Dlatego jest bardzo ważne zajmować się zbiorowym transportem osobowym w celu zabezpieczenia jej zdolności do konkurencji, dlatego z punktu widzenia społeczności przedstawia najmniej kosztowny i zarazem ekologiczny system transportu osób.

### **1. INTRODUCTION**

The increasing complexity of mobility not only in urban areas but also in long-distance journeys results in widespread congestion, economic and environmental problems like high energy consumption, high level of pollution, and more time spent on travelling and in consequence leads to dissatisfied users and passengers. This situation leads more users to leave public transport and collective modes, to use their own private vehicles for door-to-door travel, increasing the problem.

The collective transport modes need less energy (passenger/km), less space in the infrastructure, have lower pollution emissions and are more effective than the private car. So, the way to correct the public transport disfunction indicated above is to make the public transport mode a more attractive alternative to the car. A system, which fails to recognise and meet the needs of both current users and future users, will simply not achieve its full potential. Even worse, the system may eventually fail and retreat into decline.

A successful public transport system must be based upon the needs of those who use and operate it. To be more successful, it must attract more new users, and satisfy theirs requirements. Considering the velocity, capacity and size of each mode of public transport, its objective is to give similar or equal comfort and standard as the private means of transport.

## 2. THE REGULAR BUS TRANSPORT IN CZECH REPUBLIC

According to Law Nr. 111/1994 about road transport, the carrier can operate a regular bus transport only based on licence, which is granted for each link. The licence holders are bus transport companies and also minor share have the small carriers.

### 2.1. The present status of regular bus transport in Czech Republic

The bus transport companies operate also the city transport excepting 24 towns, where the city transport is operating by the own town company. The bus transport has the major share with 75% in the public transport service supply in Czech Republic.

The state, respectively regions have an interest in further development of public transport for the reason of its strategic importance for other national economy branches and also for the reason of saving the environment against the increase of individual motoring.

Since 1.1.2000 the responsibilities of regional bus transport (the length of regional bus link to 100 km) moved to regional governments, so also the price in regional bus transport is regulated by the regional government price assessment. The regional governments for the reason of price regulation and responsibility for public transport service sign the contract of public transport service in public interest and they also pay for provable loss from their own budget.

### 2.2. The trend of regular bus transport and city transport in Czech Republic

The public interest in public transport (go out EU approach) we understand to providing of basic transport inhabitants needs, mainly transport to jobs, schools, health centres, offices, courts and also to supply transport for cultural, sport, social and religious inhabitants needs. These inhabitant needs are realized mainly to 100 km distance by regional bus and railway transport. According to data from Statistic Office of Czech republic from year 2007, the public transport is still facing the decrease of the number of passengers. Tab.1 shows this trend during years 1998-2007.

Tab. 1

The trend of passenger number and realized volume during years 1998-2007

Indicator	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Passenger in bus transport (mil.pass.)	439,7	431,1	423,7	415,9	387,4	397,8	402,0	370,5	362,0	346,6
Volume in bus transport (mil.passkm)	6364	6342	6632	7645	7369	6742	6598	6764	7139	7084
Passenger in railway trans. (mil.pass.)	182,9	177,0	184,7	190,7	177,2	174,2	180,9	180,3	183,0	184,1
Volume in railway trans. (mil.passkm)	7018	6954	7300	7299	6597	6518	6589	6667	6922	6898

Where: mil.pass. – million passengers, mil.passkm – million passengerkilometer

Source: Statistic Office Czech republic

The passenger decline in 2007 (see tab.2) in comparison with year 1998 represents 21,2 %, in comparison with passenger volume from year 1998 (see Fig.1), it represents the decline of 93,1 million passenger.

Tab. 2  
The regular bus transport passenger decline trend in relationship to year 1998 in million passengers

Indicator	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Passenger decline to year 1998	0	8,6	16,0	23,8	52,3	41,9	37,7	69,2	77,7	93,1
Decline in % to year 1998	0,0%	2,0%	3,6%	5,4%	11,9%	9,5%	8,6%	15,7%	17,7%	21,2%

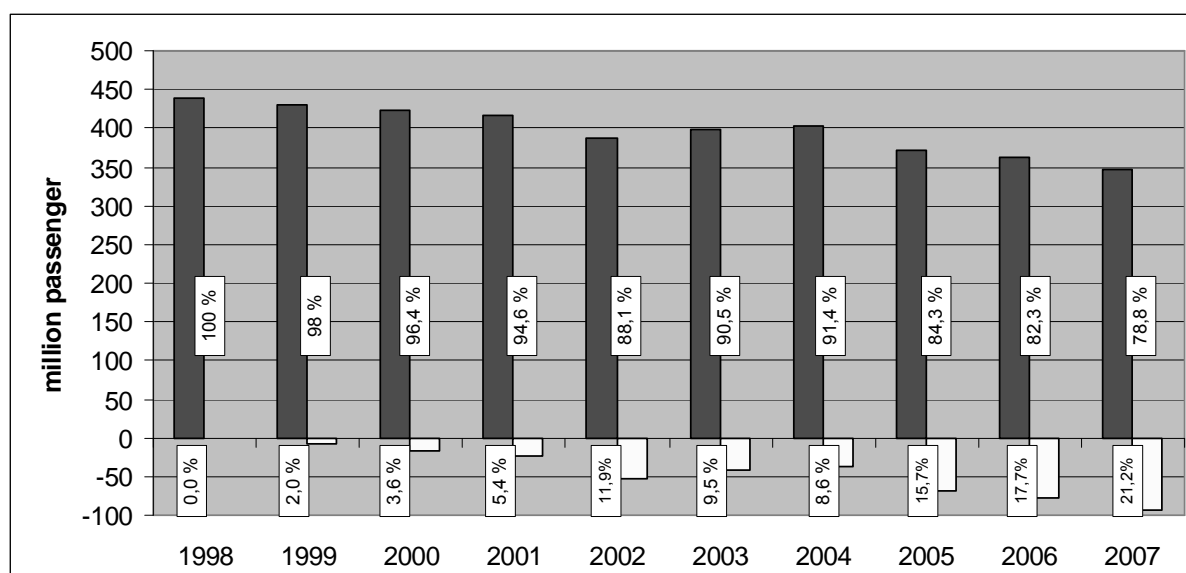


Fig. 1. The regular bus transport passenger number in years 1998-2007 and comparison of this volume with volume in 1998

Rys. 1. Liczba pasażerów w przewozach autobusowych w latach 1998-2007 i jej porównanie w stosunku do roku 1998

### 3. CITY MASS TRANSPORT IN CZECH REPUBLIC

At present the city mass transport in 24 cities of Czech Republic ensure the bus transport companies. Independent transport companies ensure the transport in 19 cities.

#### 3.1. The trend of city mass transport

Outputs development of city mass transport is possible to appreciate in two terms. The first method of city mass transport (CMT) output designation is through determination of passenger number and realized volume during years 1998-2007. The second method rests in designation of drive output of vehicles ensuring CMT.

Tab.3 shows the trend of passenger number and realized volume in CMT during years 1998-2007. According to data from Statistic Office of Czech republic from year 2007, the city mass transport is still facing with the decrease of the number passenger. Between 1998-2007 the passenger number decreasing from 2 341,7 million passengers/year to 2 258,3 million passengers/year although in 1999 and 2001 occurred passenger number increase.

Tab. 3

The trend of passenger number and realized volume during years 1998-2007

Indicator	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Passenger in city mass trans. (mil. pass.)	2341,7	2425,2	2309,8	2365,5	2338,7	2302,2	2309,6	2268,9	2238,0	2258,3
Volume in city mass trans. (mil.passkm)	14547	14949	14967	15209	15170	15540	15427	14935	14313	14353

Where: mil.pass. – million passengers, mil.passkm - million passengerkilometer

Source: Statistic Office Czech republic

The passenger decline in 2007 (see tab.4) in comparison with year 1998 represents 3,6 %, in comparison with passenger volume from year 1998 (see Fig.2), it represents the decline of 83,4 million passenger. Greatest outputs decreasing occurred in 2006 when was a decrease of about 103,7 million passenger/year.

Tab.4

The city mass transport passenger decline trend in relationship to year 1998 in mil. passengers

Indicator	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Passenger decline to year 1998	0	- 83,5	31,9	- 23,8	3,0	39,5	32,1	72,8	103,7	83,4
Decline in % to year 1998	0,0%	-3,6%	1,4%	-1,0%	0,1 %	1,7%	1,4%	3,1%	4,4%	3,6%

### 3.2. The structure of seat-kilometres offered by city mass transport

The structure of seat-kilometres offered by CMT in view of used vehicle, introduced in the text is elaborated for transport enterprises besides that bus transport operate also the trolleybus and tramway transport (in Prague metro too). Seat-kilometres offered by CMT in Děčín and Karlovy Vary are ensured exclusively by the bus transport. In other cities in Czech Republic are ensured outputs of CMT only by bus transport companies.

The structure of drive outputs in transport enterprises is presented in Table 5. 46,7 per cent of drive output is realized through bus transport, 42,7 per cent through tramway transport and 10,7 per cent of drive output is realized through trolleybus transport mode. It is necessary to note, that with increasing citizens number the CMT gets a bigger sense. Comparing the CMT realized by transport enterprises in other cities of Czech Republic the drive output of vehicles is lower than the drive output realised by transport enterprises in Prague, where the transport vehicles including the metro realize higher output than transport vehicles in other cities.

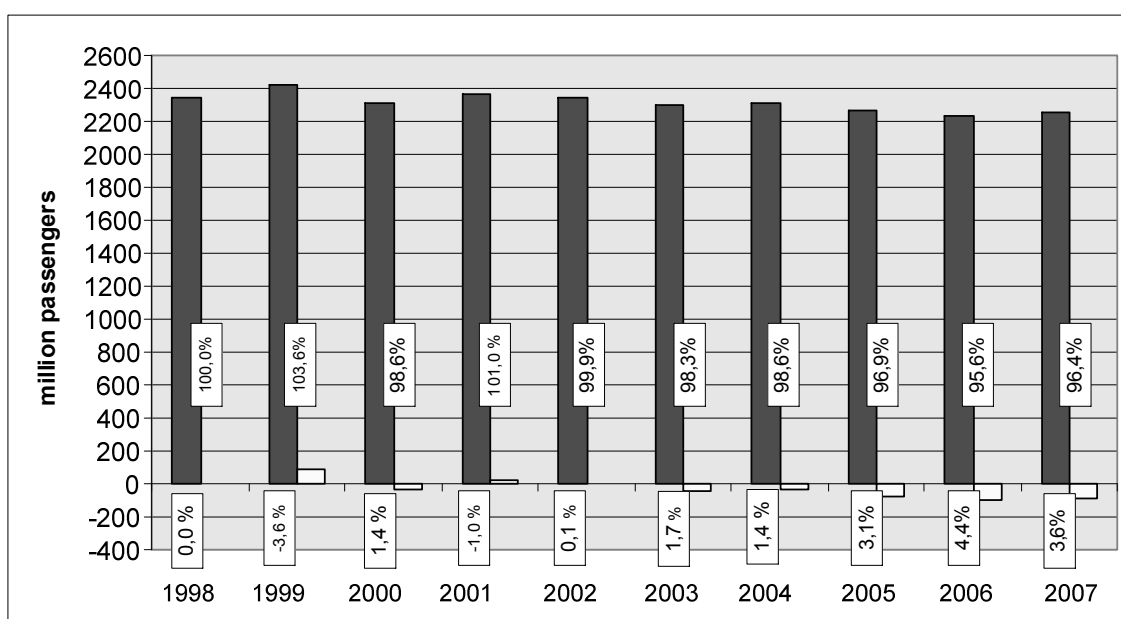


Fig. 2 The city mass transport passenger number in years 1998-2007 and comparison of this volume with volume in 1998

Rys. 2. Liczba pasażerów w przewozach transportem miejskim w latach 1988-2007 i jej porównanie w stosunku do roku 1998

Tab. 5

The structure of seat-kilometres offered in transport companies in 2006

Transport company	Seat-kilometres offered (million)	Tramways		Trolleybuses		Buses	
		Seat-kilometres offered (million)	%	Seat-kilometres offered (million)	%	Seat-kilometres offered (million)	%
Brno	4197,7	2317,1	55,2 %	461,3	11,0 %	1419,3	33,8 %
Č. Budějovice	601,0			275,3	45,8 %	325,7	54,2 %
Děčín	298,9					298,9	100,0 %
Hradec Králové	493,6			149,5	30,3 %	344,2	69,7 %
Chomutov	303,0			150,5	49,7 %	152,5	50,3 %
Jihlava	195,8			99,8	32,9 %	96,0	31,7 %
Karlovy Vary	207,2					207,2	100,0 %
Liberec	569,9	245,9	43,1 %			324,0	56,9 %
Mariánské Lázně	30,9			16,2	52,4 %	14,7	47,6 %
Most-Litvínov	583,0	193,2	33,1 %			389,8	66,9 %
Olomouc	558,3	253,7	45,4 %			304,6	54,6 %
Opava	237,0			74,5	31,4 %	162,5	68,6 %
Ostrava	3587,4	1791,4	49,9 %	243,5	6,8 %	1552,6	43,3 %
Pardubice	474,5			155,0	32,7 %	319,5	67,3 %
Plzeň	1360,6	638,7	46,9 %	297,9	21,9 %	424,0	31,2 %
Prague	11016,6	5769,3	52,4 %			5247,3	47,6 %
Teplice	330,9			133,2	40,3 %	197,7	59,7 %
Ústí nad Labem	752,8			410,6	54,5 %	342,2	45,5 %
Zlín-Otrokovice	464,6			335,1	72,1 %	129,6	27,9 %
Summary	26263,8	11209,3	42,7 %	2802,2	10,7 %	12252,2	46,7 %
Prague-METRO	8740,4						
Summary incl. METRO	35004,2						

#### 4. CONCLUSIONS

The key to reduce a large number of the current problems in transport is to encourage the passengers to travel by collective transport modes and leaving the private car use. To achieve this target it is necessary to make the public transport more attractive than the private car and the way to get it is:

- To make the public transport system more efficient,
- Allowing a larger number combination journeys, and so increasing possible users,
- Reducing the time spent in travel,
- Reducing the cost of travel,
- To promote and marketing the public transport system benefits.

For introducing a more competitive public transport than individual car transport and for relevant level quality providing for passengers, is necessary to determine relations which could ensure a documentary loss covering for the public transport and transporters also which could ensure minimal present level of transport service of city with progressive basis for integrated transport systems in the frame of region building.

#### Bibliography

1. Olivková I.: *Quality Transferring Improvement for ITS*. 9, Mezinárodní Konference MOBILITA '04. Bratislava, 2004, p. 161-166.
2. Surovec P., Olivková I., Křivda V.: *Economy of passenger transport service in regions*. "Polski transport w europejskiej przestrzeni gospodarczej", Praca zbiorowa pod redakcją Aliny Lipińskiej-Słota, Wydawnictwo Akademii Ekonomicznej im. Karola Adameckiego w Katowicach, Katowice 2005, p.179-187.
3. *Ročenka dopravy 2007*. Statistický úřad České republiky, Prague, 2008.

Received 12.01.2008; accepted in revised form 17.09.2008