

railway lines, rural development, logistics, social aspect of transport
economical operation, passenger and cargo transport

Brigitta ZSOTER, Jozsef GAL*, Antal VEHA, Erno GYIMES

University of Szeged, Faculty of Engineering
Mars ter 7., H-6724 Szeged, Hungary

*Corresponding author. E-mail:galj@mk.u-szeged.hu

PAST AND FUTURE OF A REGIONAL RAILWAY NETWORK IN MEZOHEGYES (HUNGARY) AREA

Summary. The role of railway network in the internal passenger and heavy traffic is continuously decreasing. Regarding the number of passengers, proportion of the railway out of the internal passenger transport was more than 20% less in 2000. The railway passenger transportation suffered a setback in shorter distances in the last decades. In case of railway transportation of goods both the carriage distance and the quantity of goods have decreased. Content of the load has changed, too. Comparing to the previous one, quantity of the transported building materials, metal waste, ores and coal etc. lessened. In contrast with it proportion of agricultural products, machines has increased. It is worth examining the changes in connection with the passenger and heavy traffic in the last few years not only in country level but in the level of several settlements, as well. In settlements' life a transportation route of the infrastructural sphere plays an important role. In this essay it is aiming to examine the changes in railway traffic of town Mezohegyes, a settlement on the Southern part of the Hungarian Plain, between 1990 and 2006. Research work of this kind has been carried out about town Mezohegyes earlier.

PRZESZŁOŚĆ I PRZYSZŁOŚĆ REGIONALNYCH LINII KOLEJOWYCH W REJONIE MEZOHEGVES (WĘGRY)

Streszczenie. Rola sieci kolejowej w wewnętrznym ruchu pasażerskim, nawet biorąc pod uwagę duży ruch uliczny ciągle maleje. Zależnie od liczby pasażerów proporcje ruchu kolejowego w stosunku do zewnętrznego transportu pasażerskiego były o 20% mniejsze niż w roku 2000. Kolejowy transport pasażerski cierpiał z powodu regresu popularności w ostatnich dekadach, szczególnie na krótkich dystansach. W przypadku kolejowego transportu towarów, zarówno odległości przewozów jak i ilości towarów zmalały. Zawartość ładunków także się zmieniła. W porównaniu do wcześniejszych typów ładunków ilość materiałów budowlanych, złomu, rud oraz węgla zmalała. Wzrosła natomiast ilość transportowanych tą drogą produktów rolnych oraz maszyn. Warto, więc przeanalizować zmiany w ruchu pasażerskim oraz w transporcie ciężkim w ostatnich latach nie tylko na poziomie krajowym, ale i na poziomie kilku obszarów zaludnionych. W funkcjonowaniu danego obszaru, sfera infrastruktury pełni ważną rolę. W niniejszej pracy celem jest analiza zmian ruchu kolejowego w mieście Mezohegves, miejscowości w południowej części Niziny Węgierskiej w latach od 1990 do 2006. Badania tego typu zostały przeprowadzone w odniesieniu do tego miasta już wcześniej.

1. INTRODUCTION

Unfortunately the role of railway network in the internal passenger and heavy traffic is continuously decreasing. It is the same in our area too. Regarding the number of passengers, proportion of the railway out of the internal passenger transport was 21,2% in 2000 [1]. The railway passenger transportation suffered a setback in shorter distances in the last decades, which poses a question about practical definition of mass transport or public transport. In case of railway transportation of goods both the carriage distance and the quantity of goods have decreased. Content of the load has changed, too. In contrast with its proportion of agricultural products, machines have increased [1]. It is worth examining the changes in connection with the passenger and heavy traffic in the last few years not only in country level but in the level of several settlements, as well. In settlements' life „a transportation route of the infrastructural sphere plays an important role” [2]. In this essay we are aiming to examine the changes in railway traffic of Mezohegyes, a settlement on the Southern part of the Hungarian Plain, between 1990 and 2006. Research work of this kind has been carried out about Mezohegyes earlier [3].

2. MATERIAL AND METHOD

After a short historical introduction we are planning to examine the following issues: changes in the volume of the sold railway tickets and in the number of trips per one inhabitant, turns of the sold tickets according to the km-zones and its monthly division, quantity and structural modification of heavy traffic and connections with foreign countries in the case of transoprtation of goods on railway.

3. EXAMINATION

Not only a normal gauge railway was built in Mezohegyes but a narrow gauge railway, too. We can read at Cholnoky, Jeno [4] that scientists of his period, to overcome the problems, wanted to link bigger centres with the smaller places, farmhouses and „pusztas” of their region with a railway which would have substituted the roads. This way, people could have gone to the market, to work to the fields for a reduced tariff, and the centres could have had products of far-away places for less money and easier. Later the network of the narrow-gauge railway was built up in Mezohegyes, too. Feja, Geza [5] writes in his sociography „*Viharsarok*” about Mezohegyes that its industrial railway is developing and it is about 80 km long because it runs to every farmstead. It was built to serve the industrial establishments of Mezohegyes (for example, the steam mill, sawmill, brick factory, ice-factory, digester). The network of the narrow-gauge railway in the district of Mezohegyes was run by the Menesbirtok (Stud Farm) as a private economic railway society. In a contractual agreement new fittings were produced and fixed in the engine-room, built there, for the engines and railcars of the „Alfoldi” First Economic Railway [6].

„20% of the country’s railway system can be found in the Southern Plain” [7]. We can learn from the work of Kovacs [8] that the settlement was connected to the railway traffic from three directions: from Arad towards Ujszeged, from Mezotur through Oroshaza, and from Ketegyhaza. In 1883 Mezohegyes became a railway junction [9]. In 1943 was written about it: „Among the railway junctions on the secondary railways the biggest ones are Zombor, Szentes and Mezohegyes” [10].

The traditional centre of the Regional Railway of Mezohegyes is in Mezohegyes, where the MAV office of traffic managers can be found even today. It contains the secondary railways of the Southern Tiszántúl which meet in Mezohegyes [11]:

- 121. sz. (Bekescsaba) – Ketegyhaza – Mezohegyes – Ujszeged,
- 125. sz. Mezotur – Mezohegyes,
- 125a sz. Mezohegyes – Battonya,
- 126. sz. Kisszenas – Kondorom.

Trains between Bekescsaba and Mezohegyes run every two hours in a scheduled timetable. On weekdays other three pairs of trains run according to the needs of work in three shifts. In rush hours so-called double Bz-trains, which contain two railcars and three or four additional carriages, are operated. Two kinds of timetable can be observed between Mezohegyes and Ujszeged. One of them does not meet the inter-city and job-traffic needs because it is not possible to get to work or to school to Szeged in time. Trains between Mezohegyes and Battanya run every two hours always at the same time. In Mezohegyes the arriving and departing train groups are mutually connected in each direction in the routes of Bekescsaba, Orsoshaza and Ujszeged.

Between 1990 and 2006, during these 17 years the number of train tickets sold in Mezohegyes lessened, the number of trips per one person decreased by more than two (Table 1 [14]). The railway passenger traffic of Mezohegyes was about 7,6% of the one in Bekescsaba in 1990, while in 2006 only 4,2%.

If we examine the sold tickets in km-zones, the general rule can be observed which says that the number of trips is in the inverse ratio to the distance. Accessibility of some settlements from Mezohegyes by means of public transport is shown in Table 2 [14].

During the school year 60% of the passengers do not travel further than 20 km. The number of learners who travel from the neighboring farmsteads or settlements (for example, Pitvaros, Vegegyhaza, Battanya) is significant. Half of the tickets is sold for 51-200 km than for nearer than 20km. Proportion of the tickets sold for more than 200 km does not exceed 10% of the total. In summer when commuting children cannot be taken into account, proportion of passengers who travel for a shorter distance falls back to 45%, and 35-40% of the tickets are valid for 51-200 km.

If we examine the monthly division of passengers who travel in the four main zones, the smallest monthly fluctuation can be experienced in case of those who travel in the distance of 21-50 km. Summer (July, August) trips of those who travel the nearest are relatively small compared to the other months of the year. Trips between 0 and 20 km can be regarded as commuting. Partly the shutting of the sugar factory could cause the dramatic decrease in the number of the sold tickets since the number of commuters has decreased, too.

Table 1
Number of train tickets sold in Mezohegyes (1990-2006)

Year	Tickets sold	
	Number (piece)	Number per person (piece)
1990	94320	13,3
1991	94018	13,4
1992	93351	13,5
1993	93118	13,5
1994	92011	13,6
1995	89824	13,3
1996	92424	13,9
1997	90325	13,6
1998	90125	13,7
1999	82843	12,6
2000	90008	13,9
2001	95910	14,9
2002	66382	10,4
2003	68452	10,9
2004	69682	11,3
2005	65345	10,9
2006	64880	11,1

In 2006 the number of daily arriving trains was 43, while the number of the departing ones was 41.

Table 2
Accessibility of some settlements from Mezohegyes by means of public transport

Departure-Arrival	Distance (km)	By train		By bus	
		Hour	minute	hour	minute
Mezohegyes-Bekescsaba	47	1	14	1	51
Mezohegyes-Oroshaza	39	-	57	-	45
Mezohegyes - Szeged	74	1	35	1	47
Mezohegyes-Szeged	62	-	-	1	25
Mezohegyes-Battonya	17	-	30	-	26

Between Mezohegyes and Szeged the route of the bus, which is shorter than the train, is: Mezohegyes-Pitvaros-Mako-Szeged. The longer route is the same in case of both the bus and the train.

In the last decades the transportation of goods by train significantly decreased in Europe, and so in Hungary. Our country has suffered a significant loss in freight due to the special features of the road and railway network and its size. Nowadays the mass goods which have always been transported by train are taken to their destination in growing quantity on the road.

Table 3 shows how transportation of goods in Mezohegyes changed between 1990 and 2006 [14]. The heavy traffic on railway was 14% of the one in Bekescsaba in 1990, in 2006 only its 0,72%, so it lessened dramatically in the last 17 years. The main reason for it was the shutting of the sugar factory, since the bigger part of the heavy transport was connected to this industry.

65% of the delivered goods, materials were the sugar beet. Sugar beet transported to Mezohegyes was consigned to the train in Foldeak, Mako, Oroshaza and Szekkutas. 24% of the accepted material was limestone from Nagyharsany. It was necessary to make sugar. 6% of the delivered material was soya from Croatia. The rest 5% was other transported material coming from different places of the country.

23% of the consigned goods and materials was the wet slice which was transported to Oroshaza, Szekkutas, Mako, Hodmezovasarhely, Kiskundorozsma, Szentes and Algyo. Proportion of the molasses was around 15% which was taken to Győr.

The settlement had connections of heavy traffic on railway with some foreign countries, the most important ones were (at the beginning of the examined period) the Soviet Union, France and Romania. Transportation of sowing-maize ran to 11% of the whole consignment. Its destinations were the Soviet Union and France. Transportation of the bulk grain by train was significant, too. It was 43% of the total consignment. It was transported mainly to the Soviet Union and to the ports of Romania. The rest 8% of the consignment was other product which was transported to different places within the country or in Europe.

Table 3
Railway heavy transportation in Mezohegyes (1990-2006)

Year	Consignement		Delivery	
	Wagon-load (piece)	Weight (t)	Wagon-load (piece)	Weight (t)
1990	1021	42129	323	15415
1991	1139	43307	421	15052
1992	1041	45540	451	17328
1993	1209	47057	430	15101
1994	997	44114	397	13328
1995	1100	42700	317	15216
1996	885	37401	201	6633
1997	902	38058	107	4173
1998	376	17454	81	2107
1999	387	14950	170	3520
2000	434	14340	352	12560
2001	392	15970	127	3764
2002	271	12922	85	3971
2003	250	12901	77	2404
2004	178	7450	62	2008
2005	105	4927	67	2300
2006	92	4103	99	1882

4. CONCLUSIONS

The railway traffic in Mezohegyes decreased not only in general but to an increasing degree with the shutting of the sugar factory. Passenger traffic fell back after the commuting workers of the sugar factory had remained without work. The number of the sold train tickets changes according to the seasons. More is sold during the school year than in the summer holiday. Most of the heavy traffic was connected to the production in the sugar factory. After the shutting its measure became insignificant. In the region of the Southern Plain railway lines constructed between 1850s and 1890s played an important role, so did the railway line Szeged-Temesvar. After the Trianon Peace Treaty the way the borders cuts through the railway lines was unfavorable [12].

Regions along the Romanian border require reconstruction of the earlier railway connections. „After joining the European Union the South-East connections of the Balkan suffered economic and logistic drawback without the railway line between Szeged and Temesvar, which does not function now” [12]. In the future reconstruction of the line Arad-Pecska-Battonya-Mezohegyes-Szeged will have a favorable effect on the railway traffic of Mezohegyes. To achieve this aim Battonya has applied for the construction of railway of 600 km to the border. A stage of 5 kms should be built on the Romanian side. Maybe due to it, the railway traffic of Mezohegyes would prosper according to the tetrahedron-model, and not only the infrastructure would develop in the settlement but it would have a favorable effect on the other three spheres, as well [13].

References

1. Erdosi F.: *Kozlekedes (Transportation)*. In: Perczel, J. (szerk.): *Magyarorszag tarsadalmi-gazdasagi foldrajza*. ELTE Eotvos Kiada, Budapest, 2003, p. 372-400.
2. Toth J.: *Meditacio a varosokrol es a varossa nyilvanitas hazai gyakorlatairól (Meditation about towns and cities in life of Hungary)*. Vitairat, Teruleti Statisztika, XLVIII. évf. 3. sz., Kozponti Statisztikai Hivatal, Budapest, 2008, p. 237-244.

3. Tanczos-Szabo L.: *Mezobereny kozlekedesi szerepe (Role of transportation in Mezovereny)*. In: Toth J. (szerk.): *Mezobereny, a helyet kereso kisvaros*. Bakes Megyei Tanacs V. B. Tudomanyos Koordinacios Szakbizottsaga es Mezobereny Nagykozsegi Tanacs Kiadvanya, Bekescsaba, 1980, p. 13-29.
4. Cholnoki, J.: *Magyar Alföld (Plain in Hungary)*. Foldrajzi kozlemenek, Magyar Foldrajzi Tarsasag, Budapest, 1906, p. 383-384.
5. Feja, G.: *Viharsarok. Az also tiszavidek es nepe (Viharsarok' People in South-Tisza river region)*. Athenaeum, Budapest, 1997, p. 187-190.
6. Boros, G.: *Az Alföld elso gazdasagi vasutjanak tortenelmi attekintese es jelentosege (History and importance of the first railway in Great Hungarian Plain)*. Szakdolgozat. Tessedik Samuel Foiskola Mezogazdasagi Viz- es Kornyezetgazdalkodasi Foiskolai Kar, Szarvas, 2005, p. 37.
7. Krajko G., Dobronte Z, Meszaros R.: *A telepulesek kozlekedesfoldrajzi helyzete es a nepesseg mobilitasa kozotti osszefuges a Del-Alfoldon (Colleration of transport geography and mobility of inhabitants in South-Great Plain)*. Foldrajzi Ertesito XXVII. evf., Magyar Tudomanyos Akademia Foldrajztudomanyi Kutato Intezet, Budapest, 1978, p. 415-430.
8. Kovacs, Z.: *A lakossagi ellatas szinvonalra es fejleszesenek lehetsegese alternativai Mezohegyesen (Alternatives of possible development in Mezohegyes and quality of supply chain)*. In: Becsei J., Bohm A., Dovenyi Z., Gurzo I., Kovacs Z., Nikodemus A., Retvari L.: *Mezohegyes helyzete az onkormanyzasra valo atallas idejen (Mezohegyes in on the way of local government development)*. Kutatasi jelentes. MTA Foldrajztudomanyi Kutato Intezete, Budapest, 1991, p. 70-87.
9. Balanyi M.: *Mezohegyes kepes albuma (Mezohegyes in pictures)*. Mezohegyesi Varos Onkormanyzata, Mezohegyes, 1999.
10. Vagacs A.: *A mai Magyarorszag vasuti gocpontjai (Rail-transport hubs in Hungary today)*. Foldrajzi kozlemenek, Magyar Foldrajzi Tarsasag, Budapest, 1943, p. 288-290.
11. Szedlak Zs.: *A regionalis vasuti kozlekedes fejlesztese. Az onallosva valas feltetelei. A regionalis vasuti rendszer bovitesi lehetosegei a magyar vasutak mellekvonal halozatan*. (Development of regional railways. Possibilities of development of regional railways in side lines of Hungarian network). Tanulmany. Magyar Allamvasutak Reszvenytarsasag Fejlesztesi es Kiserleti Intezete, Budapest, 2004, p. 107.
12. Traser F.: *A vasuti kozlekedes megujulasanak lehetosegei a Del-Alfoldon, kulonos tekintettel a Szeged-Temesvar vasutvonal ujjaeleszesere (Renewing of rail transport on South Plain and reconstruction of Szeged-Timisoara line)*. Foldrajzi Kozlemenek CXXVII. (LI.) kotet 1-4 szam, 2003, p 123-130.
13. Toth J.: *Urbanizacio az Alföldön (Urbanization on the Plain)*. Akademiai Kiado, Budapest, 1-200, 1988.
14. *Vasuti aru es személyszallitasi statiszika Magyarorszagon (Statistics of cargo and passenger transportation in Hungary) (MÁV)*, http://www.mav-start.hu/kozerdeku_informaciok/index.php

Received 17.08.2010; accepted in revised form 02.10.2011