

GÉZA SCHUBERT, cand. geogr.
Kiefernweg 16
06886 Lutherstadt Wittenberg, Germany
E-mail: GezaSchubert@gmx.de

Traffic Planning
Review

U. D. C.: 656.073:65.012.34(439)

Accepted: Mar. 14, 2003

Approved: May 19, 2003

LOGISTIC CENTRES IN THE HUNGARIAN TRAFFIC NETWORK - A Current Survey

ABSTRACT

As Europe's economic integration proceeds, Hungary - situated in the continent's geometric centre - is called upon to accommodate a huge volume of transit traffic. Congestion on the country's highways, already a serious problem, makes it desirable to shift transit freight traffic onto railways. For this purpose, and also to make transportation generally more efficient, the so-called logistic service centres are being established. These are expected to play a decisive role in the European freight traffic network. An expeditious extension of their services is urgently needed.

KEY WORDS

logistics, logistic service centre, transshipment, freight traffic, Hungary

1. INTRODUCTION

Hungary's highway system is incapable of coping with its ever increasing freight traffic, much of it being transit traffic to the neighbouring countries. A large part of the problem derives from the fact that Hungary's entire transport network, comprising highways as well as railways, is star-shaped, centrally oriented towards the capital. Although heavy trucks may not drive through the inner city of Budapest, transit traffic nonetheless rolls through the capital creating noise, dust, accidents, and wearing out the roads.

The first section of a beltway around Budapest (M0) was opened in the early 90s. It connects motorway M1 (Vienna-Budapest) with M7 (Zagreb-Budapest) as well as M5 (Belgrade-Budapest). This makes it possible to direct traffic from Vienna (Austria) or Bratislava (Slovakia) towards Croatia, Yugoslavia, and Romania around the city. Because of the missing section of the beltway, however, freight traffic through the northern and north-eastern parts of Hungary towards Slovakia, the Ukraine and northern Romania must pass through the suburbs of the capital (especially along the Outer Ring of Pest - the eastern part of the city). It will take at least 10 years to complete the

beltway around Budapest. Disputes between planners and the population as well as financial constraints will assure increased congestion, frustration, and disastrous accidents for years to come.



Figure 1 - The Pan-European corridors in Hungary

Budapest is not the only region suffering from unmanageable freight traffic. While an extension of the Hungarian motorway system is under works, transit traffic - especially in the eastern parts of the country - is rolling through towns and villages causing problems similar to those of the capital.

Expanding the highway system so as to expedite freight traffic around urban and rural communities is surely desirable. An additional option is to shift transit traffic from roads onto railways - as in other transit countries such as Switzerland and Austria. Logistic service centres are designed for this purpose.

2. TASK AND FUNCTION OF LOGISTIC SERVICE CENTRES

Logistic service centres (Hungarian: logisztikai szolgáltató központok, or LSZK) are transport centres offering services beyond the usual collecting, warehousing, and distributing functions. Located at road and rail junctions of transit traffic and producer-consumer networks, they provide comprehensive and

up-to-date information as well as versatile communication and management systems to facilitate timely transportation and marketing flows. They create an increase in value – in as much as the value of the goods depends on being at the right place at the right time. Shifting transit road traffic onto railways is to be regarded as one of the main functions of the logistic centres.

Prior to the fall of the Iron Curtain, storage and delivery activities were arranged mainly by producers on their own company ground. Since the 90s, however, the need to be competitive mandated cost savings, and frequently such savings were achieved through “outsourcing” the packaging, storing, and distribution activities, as well as related paperwork and even the payment of duties. Logistic service centres were designed to perform all these tasks. The service providers themselves are competitive private firms.

The possible tasks of logistic centres may be divided into the following main groups:

- *equipment services*,
- *primary logistic services* including preparing for transport, arranging links between carriers, intermediate storage, and final delivery,
- *logistic supplementary services* (fuel supply; rental, leasing, repairing of vehicles and other technical equipment),
- *safety and work security services* (property safety, custody, fire protection),
- *business management services* (custom administration; insurance, bank and mail services),
- *information and consulting services* (insurance and legal advice, marketing, introduction and training).

3. HUNGARIAN LOGISTIC CENTRES IN THE PAST, PRESENT, AND FUTURE

Under communist planning, there was no need for logistic centres. Instead, there were millions of cubic meters of storage capacities to accommodate huge stock accumulations. Today, most of those storage facilities are redundant and technically obsolete.

During the years 1991-93, the Hungarian Institute of Traffic Sciences – taking into account the flow of goods, the transport infrastructure, and local traffic-generating potentials – recommended the regions for the construction of logistic centres. These were:

Western Transdanubia (I.), Northern Transdanubia (II.), Middle Transdanubia (III.), Southern Transdanubia (IV.), Budapest Region (V.), Middle Lowlands (VI.), Southern Lowlands (VII.), North eastern Region (VIII.), Region left of the river Tisza (IX.) and South western Transdanubia (X.).

This first investigation was crucial for the construction of logistic centres. Export-import-traffic on Hun-



Figure 2 - Connection of combined terminals and logistic centres with transport corridors 4, 5 and 7

garian roads had doubled within a few years. The direction of the freight traffic had changed too, as the volume of shipments to the former Comecon-countries had decreased significantly, while the western export-import-traffic increased (as well as the North-west-Southeast or Northeast-Southwest transit traffic). Rail traffic has been similarly oriented chiefly towards the East, Southwest and Northwest.

There will be a permanent increase of the west-bound traffic in Hungary in the future. In the long term, the political and economical upturn of the CIS will produce an increase of traffic which will lead to an increase in the West-East bound freight traffic streams. Situated in the geometrical centre of Europe, Hungarian transport facilities will be ever more important to the Eastern and South-eastern European economic growth. After lifting the embargo against Yugoslavia and clearing the Danube River by removing the destroyed bridges and reconstructing them, freight traffic southwards (towards Yugoslavia, Greece and Turkey) is also going to be restored. All this points toward the urgency of constructing logistic centres in Hungary.

With the aid of logistic centres Hungary wants to become part of continental European logistic network. Hungary could develop a profitable central distribution-collection function towards Eastern Europe, if the Hungarian logistic centres are completed in good time. Furthermore, there is the aim of reducing accidents, air pollution, noise and dust resulting from excessive road traffic by relegating long-distance freight shipments onto railways. A share of railway freight traffic of about 35% (as in 1988) would be desirable. In 2001 this share was only 15-16% - despite a considerable increase of long-distance freight traffic. (In 1988 about 117 million tons, in 2001 only 44 million tons of goods were transported by the railways.) It is expected that the government is providing well-situated and sufficiently big areas for the development of the logistic centres, as well as giving financial help for developing the infrastructure.

As a result of the EU integration and, subsequently, increasing transit traffic, the Hungarian

freight traffic logistic needs to reach a competitive (West European) level.

4. SITUATION REGARDING LOGISTIC SERVICE CENTRES IN THE HUNGARIAN TRAFFIC NETWORK

4.1. Budapest: Józsefváros and BILK

As already mentioned, the capital is of outstanding importance in the Hungarian traffic network. There are four freight tranship stations in Budapest: *Óbuda*, *Kelenföld*, *Budafok-Háros* and *Józsefváros* (the latter being the most important). The main problem of all the four locations is the poor accessibility. *Józsefváros* is situated in the centre. Its main access road (Salgotarjáni út) is narrow and congested. A widening is impossible, because the surrounding area is built-up. For this reason a modern high capacity logistic service centre was proposed in 1996. The 100 ha „Budapest-Intermodal-Logistic-Centre“ (BILK = Budapesti Intermodális Logisztikai Központ).

This location (situated on the southern outskirts in the XXIII. urban district – in Soroksár) was chosen on account of an excellent traffic connection to the international motorway and railway network – next to the existing part of the motorway ring road (M0) at the exit to highway 51 as well as at the main railway line towards Yugoslavia.

The BILK is still under construction, but should have been completed in 2000. It took nearly 3 years (1997-2000) to buy the land from about 260 property owners. This and other facts (long negotiations with potential investors, long delays in releasing funds) led to a belated start of construction in the autumn of 2000. In 2001 the outer infrastructure (traffic connec-

tion to the road and railway network, service and disposal pipes) was finished. Optimists are awaiting the opening of the BILK by the end of 2003. In the meantime, privately financed logistic centres were constructed in the near-by areas. Significantly, these have no railway connections.

125 million Euro are available for the construction. The Hungarian State, both in the construction involved companies, as well as the EU have a share in this project. The property was acquired by the state (in the name of its railway company MÁV). The state agreed to pay for the development of the outer infrastructure too. One investment was the laying of a 2 kilometres long pull-out railtrack from Soroksár terminal station to the planned loading station. The loading station will be 750 meters long. Loading and unloading of 550-700 meters long container trains is possible with the help of the corresponding cranes („crabs“).

This complex will consist of three parts, which will operate independently: the logistic service centre (80 ha), the combined terminal (also called Soroksár, 10 ha), and further service facilities as well as a railway yard (10 ha). The terminal construction was supported by the state with 8 million Euro. Eight railtracks have a daily capacity up to a maximum of 120 trains. Two of them are used for the clearance of Ro-La trains. Four loading railtracks will be equipped with two crabs. The manipulation area has space for 580 normal and 24 special container units, as well as for 40 swap bodies. Up to 700 container units can be stored at the depot. Later, an extension by three railtracks is possible. This part of the BILK is managed by the MÁV Corp.

A connecting railtrack to the MAHART Csepel free-port allows for cooperation with the Danube-shipping. If a railway connection to the Ferihegy airport (Hungary's biggest international airport) were to be established, airfreight of the Hungarian company MALÉV Air Cargo could be transferred onto railroad – although road connections might be more suitable. Through such co-operation a tetramodal logistic centre would be developed.

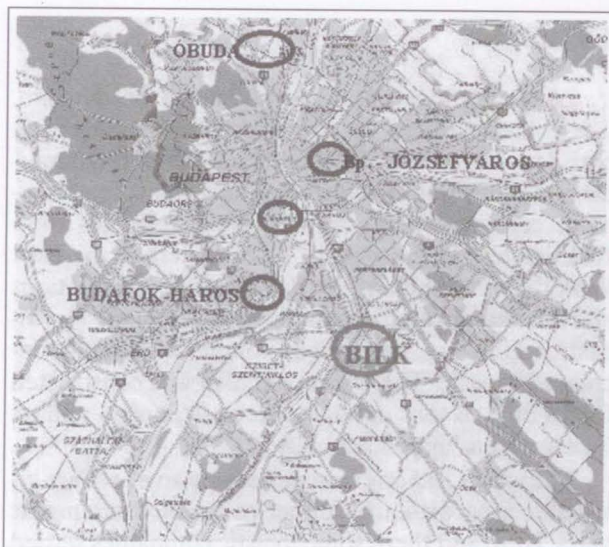


Figure 3 - The combined terminals in Budapest

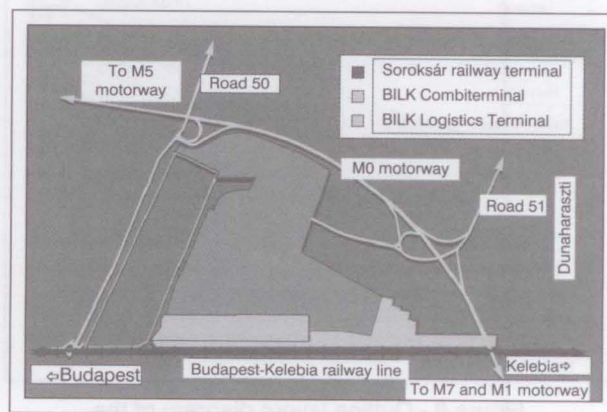


Figure 4 - Plan of the BILK

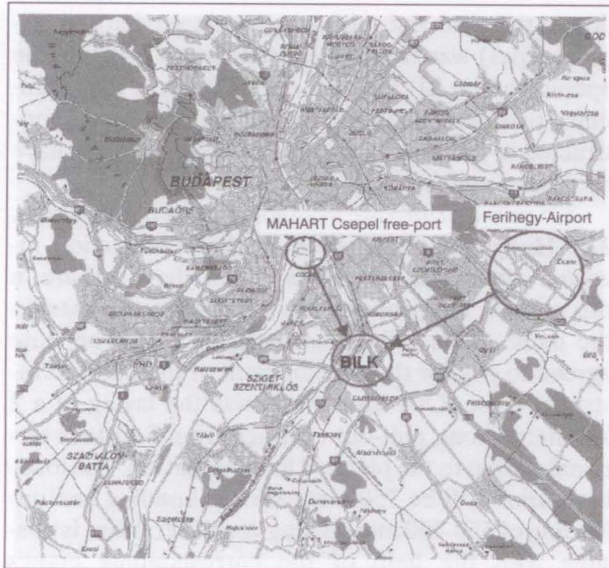


Figure 5 - Co-operation possibilities for the BILK

With opening of the BILK, the four older transshipping places in the municipal area, mentioned above, may be abandoned.

The long delay in constructing the BILK presented a serious setback to the entire logistic centre concept. A significant function of the logistic centres was to relegate long-distance transit traffic from highways onto railroads. In the case of the BILK, that chance was missed. Already, the BILK is surrounded by privately financed and operated warehousing, transshipment, and distribution centres dependent upon road transport only.

4.2. Székesfehérvár

Already at the beginning of the 90s a few internationally known companies founded branches in Székesfehérvár, e.g. Ikarus, Philips, Nokia, Stollwerck, Ford and Alba. This caused a corresponding demand for logistic services and (in 1996) the creating of

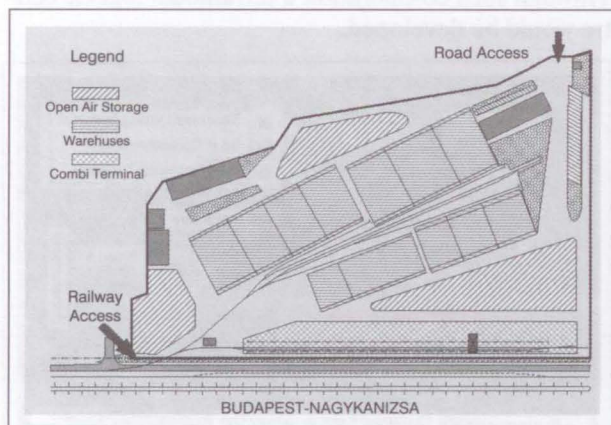


Figure 6 - Outline layout diagram of the Székesfehérvár logistic service centre

LOGISZTAR Ltd. (with a capital stock of 50,000 Euro). This company erected (on a 20 ha area) a modern logistic centre next to the freeway M7 (Pan-European corridor) and to the main railway-line Budapest-Zagreb. Because of its proximity to the capital, it will be of more than local importance. Thanks to expeditious financing, this is likely to be the first logistic centre in Hungary with full complement of logistic services. The combined terminal was completed by the MÁV Corp. and the GySEV Corp. for 1.3 million Euro. Once the first two rail tracks were in place, it was operated by KOMBISZTAR Ltd. More logistic services are being added.

4.3. Sopron

In Sopron the Raaberlag combined terminal is already in operation. Now, a new logistic centre is under construction, which will have a special collection-distribution function for catering to the Austrian traffic network – especially after an effected EU enlargement. Here, the road transit traffic through Hungary has a good railway access. The present storage capacity contains 15,000 m² of roofed and 150,000 m² of open storage space. There are facilities for sorting merchandise, packaging and consigning small parcels, as well as for container washing and repairing. The assortment of commodities includes lumber, and the services of some wood processing. Further extension is sponsored by an investment program of the operating authority (the GySEV Corp.) with the aid from Austrian and Hungarian state funds (8 million Euro). The extension includes a new container crane, new electrified Ro-La and piggy-back railtracks and new storage logistics. The completion was planned for the year 2002. Direct freight train connections extend from Istanbul and Greece all the way to Hamburg.

4.4. Záhony

Záhony is located at the Ukrainian border and, like Székesfehérvár, lies alongside the Pan-European corridor Lvov-Budapest-Ljubljana. Under communism, Záhony was one of Hungarian busiest transshipment centres. There, the rail gauge changes from 1.435 meters in the west to 1.524 meters in the east. With the disruption of the Soviet economic relations and the deteriorated economic situation in the North-east of Hungary, the freight volume at Záhony decreased rapidly. The whole complex was constructed for 18 million tons annually. Actually, only 3 million tons are transhipped annually.

The whole Záhony complex covers an 87 square kilometer area without a direct connection among its parts. Here and there some logistic companies settled down. For the moment the co-ordinated work is not

possible. Various plans for modernisation are being considered; they are aimed at the loading and storage facilities and modern information systems. Customs clearance will remain relevant, as Záhony will be an eastern outpost of the EU.

4.5. Szolnok

After years of stagnation, the district and the town council decided for a „virtual“ logistic centre. An existing railway switchyard makes extensive new investments unnecessary, good computer networking makes logistics efficient and freight transfer at the River Tisza easy. The facility, including refining, cooling and packing, aims at an EU-wide marketing of the agrarian products of the surrounding countryside.

4.6. Szeged

In the summer of 1993 a combined terminal was realized close to the Yugoslav border in Kiskundorozsma (next to Szeged) with the aim of transshipping trucks arriving from Eastern and Southern Europe directly onto the railway. During the wars in the Balkans the optimal geographical facts could not be fully exploited.

Nevertheless, this Ro-La terminal is operating successfully. There are Ro-La trains three times daily going to Wels (Austria) and once a day to Slovenia or Italy. A 520 meters long special Ro-La track is in place. The parking capacity is about 120 trucks. Trains and parking spaces are often over-crowded. There is a lack of Ro-La wagons. The Ro-La terminal of Kiskundorozsma is the largest in Hungary.

The Ro-La was used by 120 Yugoslavian trucks in 1997, by 1,700 in 1998 and by 3,017 in 1999. This remarkable increase, however, is not attributable to economic causes, but to administrative coercion. Hungary imposes quotes on transit traffic by foreign trucks.

Praelog Ltd., founded in 1997 (with a capital stock of 50,000 Euro), is responsible for the existing combined terminal, storage and port objects. The logistic service centre is going to be constructed at the planned transit junction (M5 Budapest-Belgrade /

M43 Nagylak-Arad), which will ease traffic in the city. It will meet local as well as international needs.

4.7. Győr

When, in the 1990s, Győr became a location for big international manufacturing firms (e.g. Audi Hungary Motor Ltd.), a lot of speculations revolved around modern traffic installations. The focal point of attention was the extension of the port area in Győr-Gönyű on the Danube. But for the rail access, a construction of about 25 kilometres of track would be needed, for road access to the freeway M1 about 9 kilometres. In view of an already well-developed Danube port in Komarno (situated 30 kilometres downstream in Slovakia) such investments are not worth it. The International Industrial Estate of Győr has already its own, strongly frequented combined terminal. If required, large empty spaces are available here for further extension of a logistic service centre. There are reserve spaces at the old marshalling yard. The relative proximity of logistic centres in Sopron, Székesfehérvár and Budapest (BILK) suggest low chances for Győr.

4.8. Baja

The Danube port of Baja, site of the southernmost Hungarian Danube bridge for road- and (single-tracked) rail traffic, has an important traffic function. The commodities shipped reflect the peripheral location: wood, oil, cereal, sand and gravel. The peripheral location led (in 2001) to the establishment of a Ro-Ro port, from where trucks (up to 40 per ship) can be moved within three days to Passau, thus avoiding the Hungarian transit quotas. Customs clearance and a parking space for about 120 trucks serve that kind of transit. With the EU enlargement a major increase of traffic is expected, making a complete logistic centre feasible. There is enough space for that.

4.9. Debrecen

Debrecen is the most important traffic junction in the Northeast of Hungary for road as well as rail traffic

Table 1 - Train and HGV amount of the Szeged Ro-La terminal

Route	Type	1994	1995	1996	1997	1998	1999
Szeged-Wels	train	1,265	1,581	1,817	2,224	2,957	2,536
	HGV	24,637	25,091	32,359	35,078	44,972	38,464
Szeged-Sezana	train	0	106	366	472	554	489
	HGV	0	1,608	5,308	6,397	7,289	6,832
Total	train	1,265	1,687	2,183	2,696	3,511	3,025
	HGV	24,637	26,699	37,667	41,475	52,261	45,296

(Source: Praelog Ltd., Szeged)

– and has an airport, too. Nevertheless, it was only later admitted in the national conception for the development of logistic centres (in 2000). The logistic centre of Debrecen is situated on the southern outskirts of the city and has a size of 25.6 ha (including 18,000 m² storage space). The operating authority is the TRANSSPED Ltd.; its turnover increased from 1996 till 1999 by 62% up to 9.5 million Euro (mainly by transporting, storing, and customs clearing). The lion share is apportioned to truck traffic in goods from Turkey and Greece with destinations in France, Germany, the Netherlands and Great Britain. A noticeable impetus is expected from the EU enlargement here as well.

To co-ordinate the use of road, railway and of the airspace in a better way, a holding company was founded – the “TSM-Transsped-MÁV-Kombi Ltd.”. A computer network should help to concentrate the logistic services – even though the suppliers are operating at physically separated locations from each other.

4.10. Further Planned Logistic Service Centres

Further logistic centres in the Southwest and in the Northeast never got beyond the planning stage. In Nagykanizsa a former barracks area has been designated for a logistic centre, and an Italian investor is showing interest. Uncertain property rights, however, have prevented any development thus far.

No decisions had been made about a concrete location (Miskolc or Tiszaújváros) in the Northeast of Hungary.

5. CONCLUSION

The purpose of Hungary's logistic centres is to abate congestion, accidents, air pollution, and road damage on the national highways. The logistic centres are to make truck transport more efficient, thus minimizing the distances travelled; and also to shift transit freight traffic from highways onto railroads. The first-named purpose coincides with the objectives of competitive, market-orientated enterprises and explains the success of logistic service businesses near Budapest, Székesfehérvár, Sopron, and Debrecen. The example of the Debrecen logistic centre shows that logistic centres can be managed successful without state sponsorship. The national planners of 1993 failed to consider this important location. No shifting of freight traffic onto railways is taking place in Debrecen, and the main function of logistic centres is not fulfilled there.

Meeting the second-named purpose - shifting transit trade onto railroads – mandates the imposition of quotas and fees on highway travel.

In public perception, much of the ecological wishful thinking is aimed at the shifting of traffic (transit in particular) from roads onto rail. Whether indirect subsidies will make Hungarian railroads more competitive with highway travel is uncertain. Presently, the average rail travel speed barely exceeds that one of a bicycle (27 km/h - including switching just 15-16 km/h). At many national borders, even within the EU, trains must switch engines.

The targets are obvious: extension of the rail network (double tracked, electrified and “Europe-compatible” – there is a long way to go). In Hungary the aim is described by three “L”s: Legolcsóbban (cheapest), Leggyorsabban (fastest), Legrövidebben (shortest).

GÉZA SCHUBERT, cand. geogr.

Kiefernweg 16

06886 Lutherstadt Wittenberg, Germany

E-mail: GezaSchubert@gmx.de

ZUSAMMENFASSUNG

LOGISTIKZENTREN IM UNGARISCHEN VERKEHRSNETZ – EINE AKTUELLE BESTANDSAUFNAHME

Ungarn wird im Zuge der Erweiterung der Europäischen Union wegen seiner Lage in der Mitte Europas im Güterverkehr eine immer größere Rolle spielen. Dies bedeutet zugleich ein stetiges Anwachsen des Güterverkehrs insbesondere auf den Straßen. Das sternförmige, auf die Hauptstadt ausgerichtete, größtenteils überlastete Straßen- und Schienennetz verschärft die Verkehrssituation, was eine baldige Lösung der Probleme notwendig macht. Eine Lösungsmöglichkeit besteht in der Verlagerung des Ferngüterverkehrs von der Straße auf die Schiene. Die sich entwickelnden ungarischen Logistik-Dienstleistungszentren dienen diesem Zweck und werden ein wichtiger Bestandteil im europäischen Güterverkehrsnetz sein. In Anbetracht der gegenwärtigen und zukünftigen Probleme ist der rasche Ausbau eines Netzwerkes von Logistik-Dienstleistungszentren dringend erforderlich.

SCHLÜSSELWÖRTER

Logistik, Logistik-Dienstleistungszentren, Umladen, Güterverkehr, Ungarn

LITERATURE

- [1] CSABA, A. (2001): *A logisztikai szolgáltató központok helyzete*. - Navigátor, 2001, No. 4., p. 20
- [2] *Helyzetkép a közlekedésharmonizáció szükségességének tükrében. Logisztikai szolgáltató központok makrogazdasági szerepe a mai Magyarországon*. - Essay. Ministry of trade and commerce (GM), Budapest, 2000
- [3] *Logisztikai Szolgáltató Központ. - Kedvező befektetői lehetőségek a Bajai dunai Országos Közforgalmi Kikötőben és vonzáskörzetében, Dél-magyarország közlekedési csomópontjában*. Baja, 2000

- [4] **Mavrák, I.** (1999): *A logisztika.* - Essay. Praelog Ltd., Szeged
- [5] **Ruppert, L.** (2000): *A közlekedéspolitikai irányvonal a logisztikai központok fejlesztésében.* - Essay. Ministry of Transport (KÖVIM), Budapest
- [6] **Tarnai, J.** (2000): *Logisztikai központok.* - In: GLATZ, F. et al. (editor): *Közlekedési rendszerek és infrastruktúráik.* Hungarian Academy of Sciences, Budapest, pp. 213-227
- [7] **Zsirai, I.** (1997): *Logisztikai központok.* - In: CHIKÁN A. et al. (editor): *Európai tükör. Az infrastruktúra és szolgáltatásai.* - Integral Strategic Team, Budapest, pp. 25-50

Support is gratefully acknowledged for the figures supplied by MÁV, and for the translation kindly provided by Professor Andreas Grotewold, Slippery Rock University, PA, USA.