

Stasys DAILYDKA

SC "Lithuanian Railways"

Mindaugo g. 12/14, LT-03603 Vilnius, Lithuania

Leonas Povilas LINGAITIS

Vilnius Gediminas Technical University, Dept of Railway Transport

J. Basanavičiaus g. 28, LT-03224 Vilnius, Lithuania

E-mail: leonasl@ti.vgtu.lt

PASSENGER TRANSPORTATION PROBLEMS OF THE PUBLIC LIMITED LIABILITY COMPANY "LIETUVOS GELEŽINKELIAI"

Summary. The article provides an overview of passenger transportation on local and international routes by the Lithuanian railways. It identifies the reasons due to which passenger transportation has become increasingly loss-making. Also, factors that may encourage a greater number of people to travel by train are disclosed. The development of this sector up to 2030 is reviewed, i.e. a forecast for increasing the number of passengers, a perspective for the development of electric, diesel trains, passenger wagon fleet, and the levels of estimated investments are provided. It was established that after implementation of the measures envisaged, losses in the passenger transportation field could be cut by 2–3 times.

ПРОБЛЕМЫ ПЕРЕВОЗКИ ПАССАЖИРОВ В АО «LIETUVOS GELEŽINKELIAI»

Аннотация. В статье исследуется ситуация при перевозке пассажиров по литовской железной дороге местными и международными маршрутами. Установлены причины в силу которых пассажирские перевозки становятся все более убыточными. Выявлены факторы, которые в перспективе могут способствовать увеличению числа пассажиров на железной дороге. Проведен анализ пассажирских перевозок до 2030 года, т. е. прогноз увеличения числа пассажиров, развитие парка подвижного (электро и дизельных поездов, вагонов), объемы намечаемых инвестиций. Установлено, что при внедрении намечанных мероприятий убытки при перевозке пассажиров по железной дороге можно уменьшить 2–3 раза.

1. INTRODUCTION

The main factors causing particular problems in passenger transportation by the Lithuanian railways are the following ones:

– further motorization of the Lithuanian society. With the improving standard of living in the country, the share of residents able to afford an own car has continually increased. By 2008 the

number of private cars increased by 5 per cent or more annually. Everyone having an own car is more inclined to use this transport vehicle instead of the public transportation;

- lack of modern passenger rolling stock. Within the period from 1990 till 2008, due to the lack of funds the renewal of AB Lietuvos Geležinkeliai passenger rolling stock fleet was insufficient. The shortage of passenger rolling stock suitable for operation, frequent breakdowns of operated rolling stock, expensive operation thereof – are one of the reasons for considerable reduction in the number of journeys/trips;

- restrictions of the passenger train traffic due to works performed by implementing significant upgrading projects of the public railway infrastructure. Therefore when carrying out reconstructions, it is necessary to coordinate the train traffic with the track works in such a way as the passage of freight and passenger (at least of the most important ones) was ensured;

- poor railways infrastructure connecting the Lithuanian railway network with the Polish railway network. Before the construction of Rail Baltica, AB Lietuvos Geležinkeliai plan to renew passenger transportation in the Polish directions using modern and reliable gauge change equipment.

Factors determining some increase in the number of passengers going by train:

- increasing traffic jams on motor ways, increase in road accident rates. With the increasing traffic intensity on motor ways, a train will provide a passenger with the possibility to avoid traffic jams and delays, as well as an accident risk. In the nearest perspective (3-5 years period) an actual problem of traffic jams is probable at the entries to the major cities (first of all Vilnius and Kaunas)

- world-wide growth of prices for fuel and other energy resources, increase of excises. The fuel price is the most important factor determining the choice of a transport mode for a trip. In perspective, by developing a catenary power network in the Lithuanian railways, the advantage of trains against the motor transport will increase in Lithuania;

- state regulation or its changes favourable for the development of passenger transportation by rail.

2. PASSENGER TRANSPORTATION PERSPECTIVE

The number of passengers is forecasted to increase by 2015 (see fig. 1) mostly due to the introduction (renewal) of new routes and increasing the frequency of journeys.

Renewal of the passenger rolling stock fleet and upgrading of the railway infrastructure are long-term processes, therefore no sudden changes in improving the quality of passenger transportation (increasing the speed, comfort of ride) are possible.

A marked increase in the number of passengers travelling on local railway routes is forecasted after the year 2015. This will be determined by the renewed passenger rolling stock fleet: installed modern booking and sales system; increased jams on motor ways; increased fuel price; state transport policy encouraging travel by train; upgrading of the railway routes Vilnius-Kaunas (and afterwards Kaišiadorys–Šiauliai, Šiauliai–Klaipėda) after which implementation the permissible speed of passenger trains will be increased (up to 160 km/h).

Seeking to improve the conditions of international communication, the transportation of passengers is intended to be developed by international trains formed by Lietuvos Geležinkeliai AB: in the Eastern direction and in the North-South direction.

International trains formed by Lietuvos Geležinkeliai AB are loss-making due to market specificity (i.e. relatively small rates for passenger transportation and small carriage volumes) (in 2008, the loss amounted to over LTL 30 million) and there are no possibilities to ensure profitable nature of this activity by investment or other measures (at least in the near future). State subsidies are also necessary for the pursuance and development of this activity.

The forecasted dynamics of passenger transportation on international routes is provided in the figure. It is expected that the number of passengers travelling on international routes will increase from 1.0 million (in 2008) to 3 million passengers (in 2030). A significant increase in the number of passenger volumes is expected after constructing the European gauge Rail Baltica to the Kaunas

passenger station (from 2018), when the conditions for passenger transportation on Corridor I will be essentially improved.

Fig. 3 provides information about an estimated number of passenger trains by railway lines.

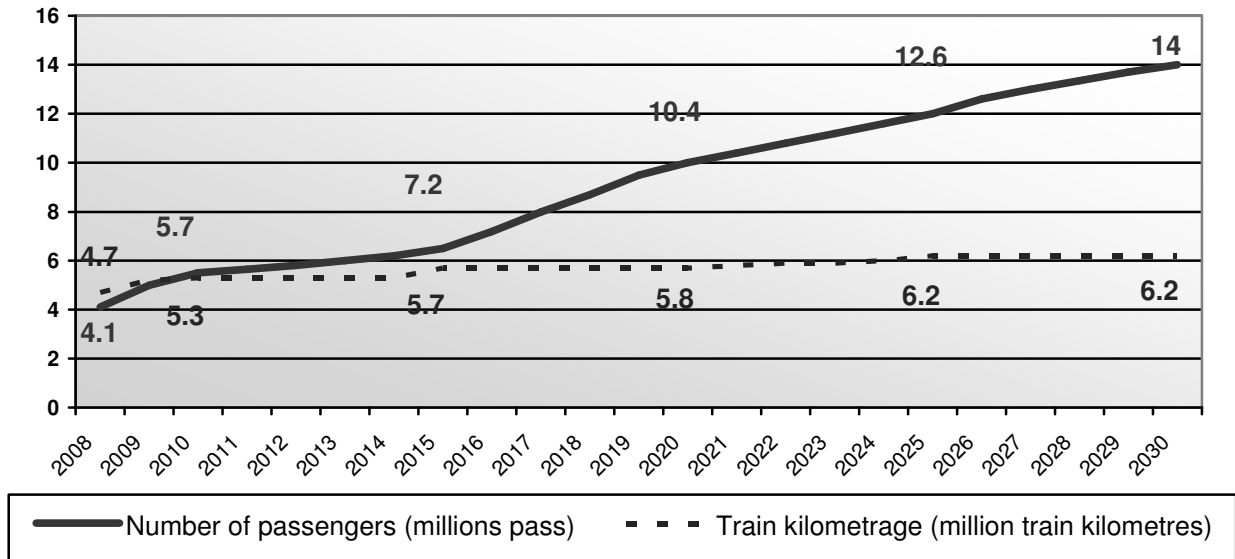


Fig. 1. Passenger transportation on local routes by Lietuvos Geležinkeliai AB during 2008–2030
 Рис. 1. Местные перевозки пассажиров АО „Lietuvos geležinkeliai“ («Литовские Железные Дороги») в период 2008–2030 г. г.

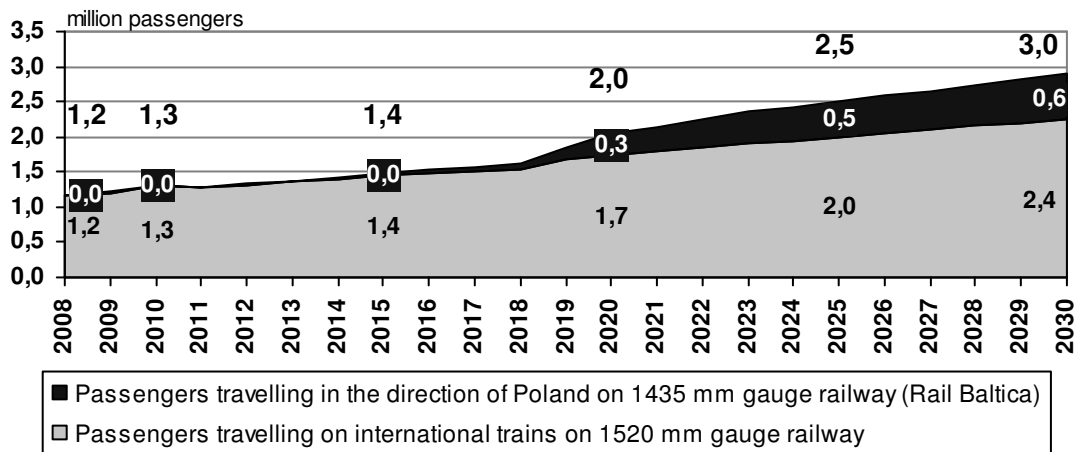


Fig. 2. Passenger transportation on international routes by Lietuvos Geležinkeliai AB during 2008–2030
 Рис. 2. Международные перевозки пассажиров АО „Lietuvos geležinkeliai“ («Литовские Железные Дороги») в период 2008–2030 г. г.

3. MAIN OBJECTIVES RAISED FOR THE PASSENGER TRANSPORTATION SECTOR

First of all the following works are necessary to perform:

- 1) to ensure capacities necessary for the development of passenger transportation activities: sufficient capacity of the railway infrastructure and sufficient passenger rolling stock fleet;
- 2) to ensure the compliance of services quality with customer needs; to increase the accessibility of services. The focus of the passenger transportation activities on customer needs is the only one way to

increase the attractiveness of a railway carrier and to attract customers. By focussing on customer needs, a carrier will develop the services for tourist routes;

3) to enhance the efficiency of activities (to minimize operating costs). Reduction of loss in the passenger transportation activity is a necessary condition for the continuity of this activity in the company.

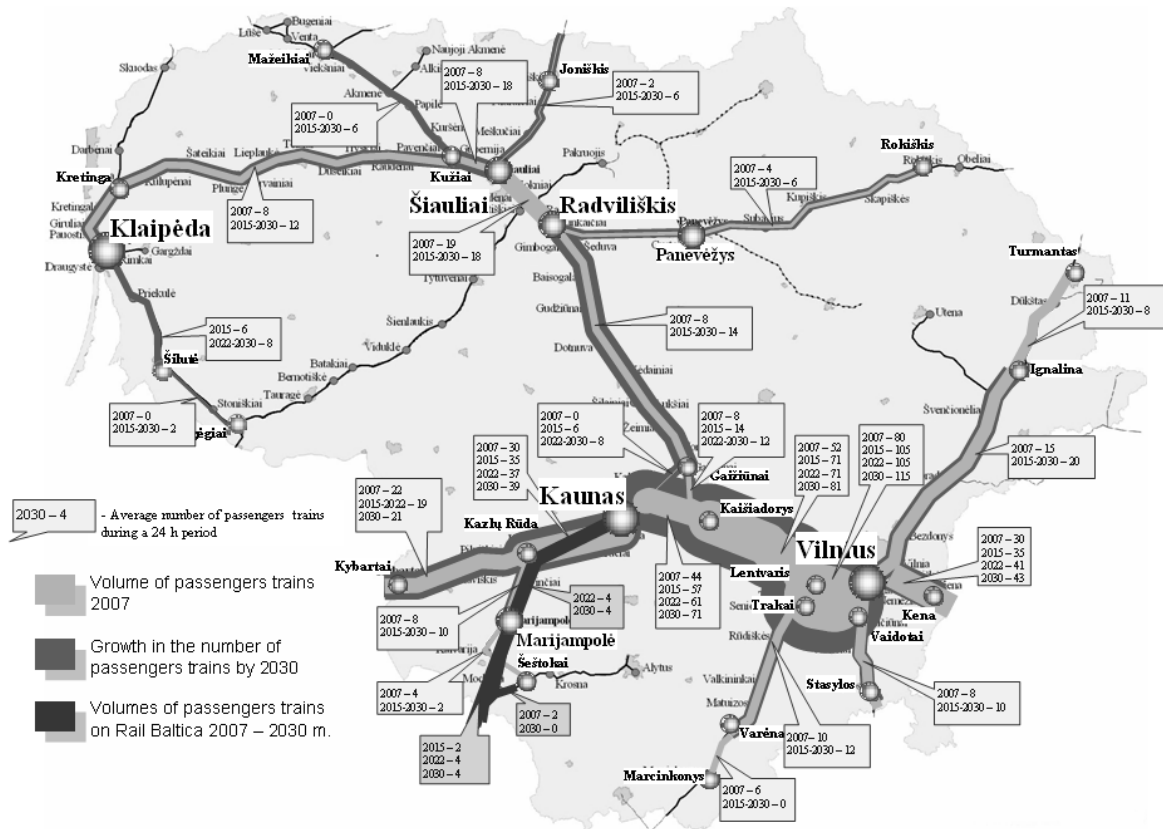


Fig. 3. Number of passenger trains by Lietuvos Geležinkeliai AB in 2007–2030 by lines

Рис. 3. Число пассажирских поездов на линиях АО „Lietuvos geležinkeliai“ («Литовские Железные Дороги») в период 2007–2030 г. г.

The main directions for the upgrading and development of the passenger transportation economy: renewal of the electric train fleet; renewal of the diesel train fleet; renewal of the passenger wagon fleet; renewal of the passenger locomotive fleet; acquisition of passenger rolling stock for the routes in the direction of Poland (Rail Baltica);

By 2015, Lietuvos Geležinkeliai AB plan to acquire new electric trains for the renewal of the old fleet. 14 electric trains will be acquired (including the ones already being acquired under the agreement signed with ČKD VAGONKA as.), designated for local communications routes Vilnius (N.Vilnia)–Kaunas, Vilnius (N.Vilnia)–Trakai.

After developing the catenary network in the route Kena–Kybartai in 2020 and Kaišiadorys–Klaipėda in 2024, new electric trains for operation in the newly electrified lines (Corridor IX) are being acquired.

Lietuvos Geležinkeliai AB started the renewal program of diesel trains:

– According to agreement of 2007 with TMHB UAB, 4 new diesel trains are being acquired (4 trains with 2 wagons each, and 2 coupled wagons). The operation of trains was commenced in 2008. These trains will replace the D1 trains being written off. New diesel trains are more efficient (fuel

costs are approximately smaller by 30% , and lubricant costs are smaller by 4 times) and a lot more comfortable than the old ones;

– According to the 2008 agreement with the Polish factory PESA Bydgoszcz Spółka Akcyjna Holding, 2 railcars were acquired which operation was started in the autumn of 2008.

During the period of **2010–2017** an intensive renewal of the diesel train fleet for replacing the old fleet is planned – over 20 new diesel trains and/or railways will be acquired. During **2011–2013** the acquisition of 3 *new* (consisting of 10 wagons each) diesel trains designated for the route Vilnius-Klaipėda (by refusing of the diesel traction for local carriages) is planned.

During the period of **2010–2020**, renewal of the whole passenger coach fleet is planned by replacing the worn out coaches with the new or upgraded ones.

After optimising the use of passenger coaches, the company plans to organize activities by operating ~85 passenger coaches. The need for passenger coaches will reduce due to the abandonment of diesel traction on local routes.

For the renewal of the route Vilnius-Warsaw (in the perspective Vilnius-Warsaw- Berlin), 2 passenger trains with a modern gauge change equipment is planned in 2011. After constructing Rail Baltica to Marijampolė and to Kaunas, these trains will be used for the route Vilnius-Warsaw by shifting the gauge change equipment to Marijampolė or Kaunas correspondingly. One adjustable gauge train could be used as a standby train for the route Vilnius-Klaipėda.

After constructing Rail Baltica to Kaunas (~2018 m.) and developing passenger transportation on the route Kaunas-Warsaw, the acquisition of 2 *high-speed 1435 mm gauge trains* is planned. The company will acquire these trains either itself or together with partners/sharers (depending on the form of organizing activities in the Rail Baltica line).

4. NEED FOR INVESTMENT

The need for investment into the passenger transportation activities is shown in fig. 4.

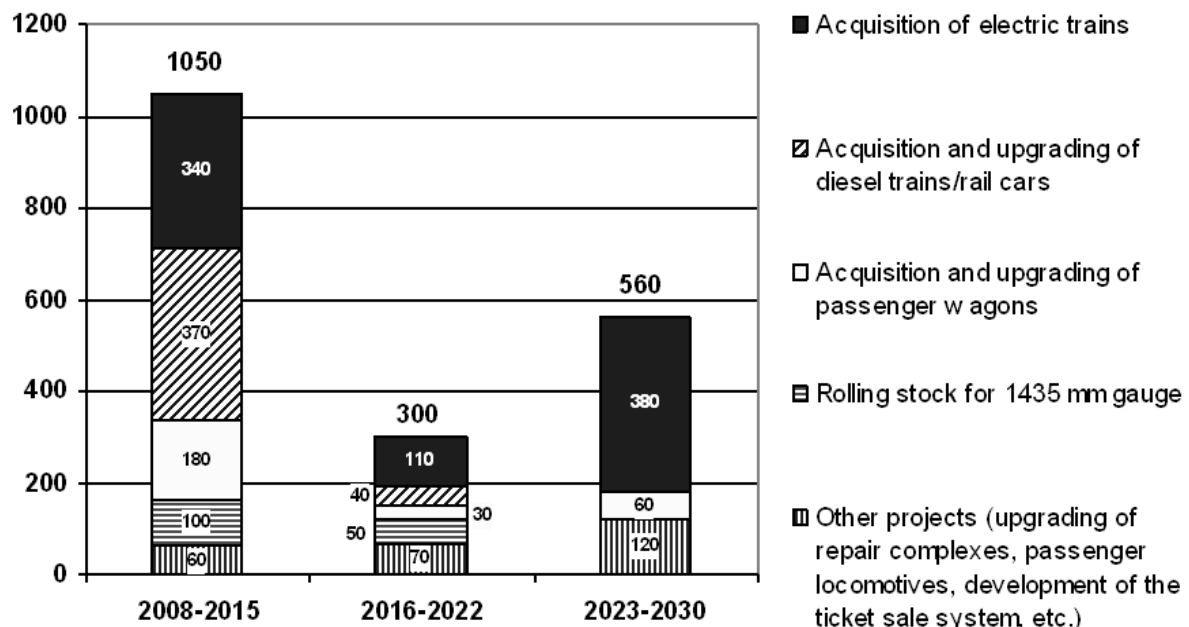


Fig. 4. Preliminary need for funds for investment into the passenger transportation economy

Рис. 4. Прелиминарная потребность инвестиции в литах (Lt) на пассажирские перевозки в период 2008–2030 г. г.

According to the distribution of the need for funds for investment by year, the greatest need for funds will be during 2008–2015 years. During this period, the service term will expire for a major part

of the rolling stock fleet of Lietuvos Geležinkeliai AB (electric, diesel trains, passenger coaches and passenger locomotives operated in 2007) that will be replaced into the new or upgraded ones.

During this period the formation of Vilnius-Warsaw trains is intended. The need for funds for 2 modern trains with the adjustable gauge system amounts to approximately LTL 100 million. By assessing the fact that a train is formed seeking to satisfy the public interest (the company will not have commercial gain), implementation of the project is intended only after receipt of state funding for it.

Besides, during the period from 2008–2015, diesel traction for local carriages is planned to be abandoned. 3 module trains are necessary for this purpose. It has been estimated that approximately LTL 100 million will be necessary for their acquisition.

After 2015 the major part of the passenger rolling stock fleet will be renewed, therefore the level of investments in the passenger transportation fleet will be considerably reduced in 2016–2022.

During 2023–2030, an essential share of investment will consist of the acquisition of additional electric trains after electrifying the main corridors. Upon reduction of the need for diesel trains, no funds are envisaged for their renewal or development.

5. CONCLUSIONS

1. It is planned by increasing the number of passengers and minimising the costs owing to investments, marketing and other measures for optimising activities, the loss-making nature of this activity will be reduced in the long-term perspective. Nevertheless, after assessing the experience of railways of European countries and the specificity of Lithuania (railway network, resident density) that is not favourable for passenger transportation by railways as a commercial activity, it may not be expected that this activity will become profitable and it will be possible to carry it out without state subsidies.

2. Based on preliminary calculations, after the development and renewal of passenger transportation activities, losses may be reduced by 2-3 times (from LTL 150 million to LTL 50-70 million); also the need for state funding will decrease.

References

1. Vilnius Gediminas Technical University, Institute of Transport Sciences: *Study of implementation of the public service obligations for passenger transportation by the railway transport*. Vilnius, 2008.
2. Optimalus Ryšys UAB: *Study of improving passenger communication by the railway transport*. Vilnius, 2007.
3. *Lithuanian strategic national railway development plan for the years 2005–2015*.
4. RAILPLAN and NEA project: *Development of the properly balanced system for the passenger railway transport*. Vilnius, 2003.

Received 04.01.2009; accepted in revised form 23.08.2009