Rail-Road Combined Transport: new developments and opportunities

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AB “Lietuvos geležinkeliai”
**Market share in the Baltic states**

39%  
In terms of freight transportation in 2014

**Turnover**

EUR 461.6 m  
+ 1.01%  
In 2014

**Investment**

EUR 331.6 m  
In 2014

**Freight transported**

49 million tons  
+ 2%  
In 2014

**Long-term investment**

EUR 2.017 bn  
For 2014

EUR 1.832 bn  
2015-2018
GREEN CORRIDORS is a European Commission initiative aiming at strengthening the logistics industry's competitiveness and creating sustainable solutions.
THE MAIN GOALS

Goals uniting AB “Lietuvos geležinkeliai” and Green Corridors

- Sustainable logistics solutions
- Integrated logistics concepts – all transport modes
- Harmonized regulations
- A concentration of freight traffic on long transport routes
- Efficient and strategically placed trans-shipment points
- A platform for development and demonstration of innovative logistics solutions, including information systems, collaborative models and technology
DEMAND FOR THE DEVELOPMENT OF COMBINED RAIL-ROAD FREIGHT TRANSPORTATION

Ecology

Freight trains of AB Lietuvos geležinkeliai pollute nature by 10 times less than road transport.

Diesel consumption rate in freight transportation: road transport ~200 l/10,000 tkm, freight train – 18 l/10,000 tkm.

Percentage share of greenhouse gas emissions by types of transportation:
- 76 %
- 12 %
- 10 %
- 2 %

Time

Freight transportation transiting Lithuania by rail takes about 5 hours more than transportation by road.

This difference in time does not have any significant impact upon the efficiency of the transportation; carriage of freight by road meets traffic congestions on the EU borders which increases the transportation time by several days.

Container trains cross the border (Lithuania / Belarus) in 30 min.

Safety

Fatalities in traffic accidents in Lithuania (2014)
- in road accidents – 265
- on railways – 17, of which through the fault of railwaymen – 0.

One fatality on the State level is estimated at about EUR 400,000.

Injuries in traffic accidents in Lithuania (2014)
- in road accidents – 3,889
- on railways – 8, of which through the fault of railwaymen – 0.

One injury on the State level is estimated at about EUR 250,000.
IN EU COUNTRIES ROAD TRANSPORTATION ACCOUNTS FOR 76% OF THE TOTAL GROUND TRANSPORTATION, THE REVENUE ACCOUNTS FOR 96%.

<table>
<thead>
<tr>
<th>Ground transportation in EU, 2013</th>
<th>Volumes</th>
<th>Percentage</th>
<th>Revenues</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement unit</td>
<td>billion tkm</td>
<td>%</td>
<td>EUR billion</td>
<td>%</td>
</tr>
<tr>
<td>Road transport</td>
<td>1,734.1</td>
<td>76.1%</td>
<td>62.6</td>
<td>95.6%</td>
</tr>
<tr>
<td>Intermodal (combined) transportation</td>
<td>124</td>
<td>5.4%</td>
<td>0.7</td>
<td>1.0%</td>
</tr>
<tr>
<td>Railroad transportation</td>
<td>420</td>
<td>18.4%</td>
<td>2.2</td>
<td>3.4%</td>
</tr>
<tr>
<td>Total:</td>
<td>2,278.1</td>
<td></td>
<td>65.5</td>
<td></td>
</tr>
</tbody>
</table>

Data source: EU, UIC, Eurostat
The principal objective defined in the White paper – decrease hazardous emissions by 60%.

- **by 2030.** 30% of road freight over 300 km should shift to other modes such as rail or waterborne transport by 2030.

- **by 2050, the figure must reach** 50%. Furthermore, to ensure full safety on roads in the course of the next 40 years, and halve the number of casualties on roads by 2020.

The White Paper emphasised that the transportation system could not develop the same path as until now – and a much more sustainable direction of development is required.

- One of the possibilities to attain the objective is to connect all core network airports to the rail network, preferably high-speed; ensure that all core seaports are sufficiently connected to the rail freight system by 2050.

- Moreover, the White Paper anticipates a more comprehensive move towards full application of "user pays" and "polluter pays" principles, in addition to ensuring financing of the future investment in transport system.
Container transportation in Europe is organised on the basis of direct communication between terminals:

- more than 300 terminals on the territory of 29 countries
- 21,500 container dispatches per year
- total more than 70 million of freight units transported every year
- more than 1,100 types of services
- The national legislation in most Member States of the European Union provides restrictions on road transport, which plays a significant role for stable functioning of container transportation
RESTRICTIONS ON FREIGHT TRANSPORT IN SOME COUNTRIES OF THE EUROPEAN UNION

The national legislation in most Member States of the European Union provides for restrictions on road transport, which plays a significant role for stable functioning of container transportation.

AUSTRIA
Prohibited traffic of freight vehicles with a trailer, if the gross weight of the vehicle or the trailer exceeds 3.5 tons, also freight vehicles and trucks with semi-trailers of gross weight exceeding 7.5 tons:
• on Saturdays from 3:00 p.m. to 12 midnight
• on Sundays and public holidays – from 12 midnight to 10:00 p.m.
In the period from June 1 to August 31, on Saturdays from 8:00 a.m. to 3:00 p.m. – prohibition of transport on the routes busiest on week-ends for vehicles of gross weight exceeding 7.5 tons.

ITALY
Prohibitions for freight transport:
• from 08:00 a.m. to 10:00 p.m. on Sundays from January to April and from October to December
• from 07:00 a.m. to 12:00 midnight on Sundays and national holidays from May to September

GERMANY
Prohibition of traffic of freight transport on the entire network of roads from 12:00 midnight to 10:00 p.m. on Saturdays, Sundays and national holidays. There are some restrictions on transportation at night time on selected sections of highways that are marked with specific road signs.
• Combined rail/road transportation carries out transportation from a port to the closest railway loading point, or from a railway unloading point to the consignee at a distance not exceeding 200 km
• Transportation of fresh milk, dairy products, fresh meat and its products, fresh and live fish and its products, fruit and vegetables.
• Unfilled road vehicles.

SWITZERLAND
Prohibition of traffic on the entire territory of the country on Sundays and national holidays from 12:00 midnight to 12:00 midnight. At night time the prohibition on traffic is imposed from 10:00 p.m. to 05:00 a.m.
• OAO РЖД and VR Group Ltd concluded an agreement on the development of regular container transportation in the Russian-Finnish direction; a new pilot route Moscow-Helsinki has been developed.

• A specialized flat wagon (Model 13-9961) was developed according to the order of AO ФГК, and certified in the RF for contrailer-container transportation consistent with the requirements of the terminal infrastructure; other accomplishments include approved procedure for transportation of intermodular units, loading and mounting of road-trains, vehicles, trailers and trucks on the platform of Model 13-9961.

• First rolling stock on gauge 1520 for the new market segment – transportation of vehicle trailers and semi-trailers.

• Possibility to use in Member States of the EU (gauge 1435).

• The main feature of the platform – the height of the loading dock is lowered to 1,100 mm. Regular platforms have the floor height at 1,300 mm. Due to lowering the height of the floor of the platform the road-trains mounted on the platform now comply with the loading gauge used in the CIS countries.

• In 2015, the first European-Asian container transportation operation was completed in the RF, completed works on checking the arrangement and fixing of the means engaged in regular contrailer transportation using flat wagon of Model 13-9961, which is being prepared for serial production.

• Currently the efforts of ФГК are focused on the elaboration of perspective organization of contrailer transportation within domestic routes, in particular in the direction Central region (Moscow) – Ural – Siberia.

### FLAT WAGON FOR CONTRAILER TRANSPORTATION, MODEL 13-9961

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load capacity, tons</td>
<td>55.5</td>
</tr>
<tr>
<td>Wagon weight, tons, min/max</td>
<td>28.7 / 30.5</td>
</tr>
<tr>
<td>Wagon width, mm, max</td>
<td>3,200</td>
</tr>
<tr>
<td>Measurements according to GOST 9238-83</td>
<td>1-T</td>
</tr>
<tr>
<td>Wagon base, mm</td>
<td>15,800±20</td>
</tr>
<tr>
<td>Length at axes of the coupling, mm</td>
<td>21,500</td>
</tr>
<tr>
<td>Operating life, years</td>
<td>32</td>
</tr>
</tbody>
</table>

Load capacity, tons: 55.5
Wagon weight, tons, min/max: 28.7 / 30.5
Wagon width, mm, max: 3,200
Measurements according to GOST 9238-83: 1-T
Wagon base, mm: 15,800±20
Length at axes of the coupling, mm: 21,500
Operating life, years: 32
EXPERIENCE OF LITHUANIA ON THE ORGANISATION OF CONTRAILER TRANSPORTATION

‘Nemunas’, route: Kaunas-Vilnius-Klaipeda (Lithuania)-Minsk (Belarus)-Lithuania

- In 2013, a contrailer train Nemunas started its regular route from Vilnius to Koliadichi
- The train transports freight vehicles on the flat wagon, a passenger wagon is equipped specially for the drivers.
- Train composition: 15 wagons
- Transportation control enforced on the dispatch (destination) station

Agreed technology of transportation of vehicles on flat wagons

Transported vehicles:

- **152**
- From 21 November 2013 to 27 July 2014

Equipped ramps (Vilnius, Kaunas, Klaipėda)

Concluded agreement with АО ОТЛК

Wagons transported

- **22**

Task force set up between:
According to the data of Statistics Lithuania, over 2 million tons of different freight are transported over the border crossing points between Lithuania and Kaliningrad.

Approximately 100,000-120,000 freight vehicles every year.

Having developed a competitive service of combined rail/road transportation, and in the early stage having redirected 5% of freight vehicles, trailers and semi-trailers to rail transportation, possible transportation of **4 road trains per month**.
Opened in May 2015

**Intermodal terminal in Vilnius**

Handling capacity – 100,000 TEU per year

New intermodal train “VIT EKSPRES”

**1465 TEU**

Storage capacity

Agreements with container lines
NEW INTERMODAL TRAIN “VIT EKSPRES”

Regular (twice a week) container train shuttling from Klaipėda’s port to Vilnius intermodal terminal

The service includes:

• Freight transportation by rail;
• Shunting in Port of Klaipeda and VIT;
• Loading at terminals of port of Klaipeda (KKT or Smeltė);
• Railway bills and T1;
• Storage of containers in VIT up to 45 days;
• Formalization of transit declaration.

Clientele:
RAIL-ROAD COMBINED TRANSPORT: NEW DEVELOPMENTS AND OPPORTUNITIES

4 railroads (two 1520 mm and two 1435 mm width)

Container gantry crane (40 t)

Annual capacity of handling ~ 55 000 TEU

Intermodal terminal in Kaunas
Progress on entering Poland as railway undertaking:

• Consensus reached with Polish institutions;
• Only step left – to have a Loco which complies with all technical requirement in Poland.

Simultaneously two options are under process:

• Modernization of two of existing ones;
• Acquisition of new.

Plan – to get the certificate and start operations in 2016.
PLAN – TO DEVELOPED „POCKET WAGONS„ FOR 1520 MM WIDTH GAUGE

I Stage (no need to get certified in Russia)
II Stage after certifying in Russia
III Stage (from 2018 m.) after KIT connection to UIC
CONCLUSION

- A combination of the different types of transportation, benefiting from the advantages of each of the type increases the efficiency of the entire transportation sector.

- The competition between the carriers of individual types of transportation (unrestricted access to the infrastructure for all potential carriers) increases the efficiency of the specific type of transportation, and, as a result, that of the entire sector.

- In the segments characterised by natural monopoly due to technological, legal or other reasons, there is no competition between the carriers; to reduce the negative impact of the carrier holding the monopoly position its operations must be controlled by the state.

- To maximise the use of the railway transport, the railway and the road transportation sectors must cooperate in the area of passenger and freight transportation:
  - the railway carries out the transportation from the railway station/logistics centre to the destination railway station/ by means of the logistics centre, transportation 'from doors' to the railway station / logistics centre, and from the station/logistics centre 'to doors'.

**Substantial conditions:**

- Unification of operating conditions for the railway and the road transportation, development of the infrastructure for combined and inter-modal transportation, development of combined and inter-modal transportation.

- Combined railway-road transportation is one the promising niches that has to be developed by join efforts.
PROSPECTS FOR THE DEVELOPMENT OF COMBINED RAILWAY-ROAD TRANSPORTATION IN EUROPE
THE FUTURE LOGISTICS TODAY!

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October 2015
Klaipėda