

DEVELOPMENT OF PASSENGER TRANSPORTATION BY LITHUANIAN SEA TRANSPORT

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1. INTRODUCTION

Following restoration of independence of Lithuania, passenger transportation by ferries from Klaipėda ports has been progressing rapidly – a number of ferry lines are increasing, flows of passengers are growing. Possibilities of ferry navigation, however, are not fully exhausted. Therefore, this article deals with analysis of passenger transportation by Lithuanian sea transport and trends of development of this transportation.

2. DEVELOPMENT OF TRANSPORTATION BY FERRY LINES IN THE BALTIC SEA

The market of transportation by ferries is one of the most perspective and the most rapidly developing markets in the international shipping. The world ferry fleet has already about 2800 ships, 1200 of which are cargo-passenger ferries of different purpose and 1600 ones are high-speed ships. The Baltic region, in which a number of population amounts to 85 mill., includes 500 ports.

Transportation by ferries within the Baltic Sea in the international market is the most concentrated in the world. Prevalence of short and medium routes determines frequent ship traffic. The total number of ferry lines in the whole Baltic region is constantly growing. A fair amount of this number includes inner lines, connecting parts of the Baltic state continents with island territories.

Ferries have become an inseparable sea chain among overland routes in most countries. This factor is effective in the Baltic Sea as well, where ferry lines are connected with European continent through a thousand of islands – in the Baltic channel zone, Goth land, Born Holm, Aland, Saarem, etc. However, the major stimulus in the Baltic ferry transportation market happens to be relations of the Scandinavian Peninsula and Finland with the other European part.

The Baltic ferry transportation market (based on data of the year 2001) makes up 161,5 mill. passengers, 54 mill. cars, 4,7 mill. trackers, 258 thou. buses. Internationally, each of these complex trade parts plays a significant role in ferry transportation. The Baltic Sea region covers 43 % of the world car transportation, 30 % – bus transportation, 23 % – cargo trackers, 20 % – passenger transportation. In the major ferry lines cargo transportation exceeds 40 mill. tons per year.

Development of passenger transportation has been the fastest – on the average, its number has increased by 6 % in the latest years. Growth of car transportation is slightly lagging behind - by 4,5-5,0 %. The greatest number of ferry passengers is transported between Denmark and Sweden – 24,0 mill., between Finland and Sweden – 8,8 mill., between Denmark and Germany – 7,8 mill., between Finland and Estonia – 6,0 mill., between Germany and Sweden – 2,4 mill., between Poland and Sweden – 0,78 mill. passengers per year (based on data of the year 2001).

On the average, each Baltic ferry line has two ferries, however, in the specific ferry line service their number may vary from 1 up to 3 – 4. The region fleet contains all types of ferries, the main part of which consists of car transport ferries and passenger ferries, carrying motor transport vehicles as well.

A high-speed ferry, the speed of which exceeds 30 knots or more, successfully competes with air transport in passenger transportation; other types of ships also play an important role in cruise business. Here, the so-called “cruise ferries” should be mentioned – heavy and comfortable ships with high-level service.

These expensive ships, same as cruise liners, are distinguished for long exploitation. Though in the nineties new ships supplemented the world ferry fleet, currently, ships over 20 year-old make up over 50 % of ships or 40 % of fleet tonnage. Ferries may be in service 2-3 times longer than freighters, they are being modernized, transferred "from hand to hand", and renamed.

Ferry fleet has avoided the mass „wastage“ into the famed registers. Baltic ferries, often arriving into national ports, are usually registered with its own country's flag; however, sometimes flags of free economic zones may be still met.

The united navigation politics and the common sea servicing market in the EC have been purposively formed for many years. Integrated processes provide for harmonization of competitive terms within the EC, mutual access to coasting transportation (mutual permit for coasting transportation), unification of national sea laws, and a number of other projects. The idea of the united shipping register – „EUROS“, has been considered for many years; this would enable to move to the common „euro – flag“ in all sea ships of countries-members. The EC general action program may make a great effect on the Baltic transportation market.

Presently, some leaders in the market have a control over the major ferry centre in the Baltic waters. In the Western basin part interests of the Danish-German Scandlines and the big group Stena Line in the eastern Baltic part there dominate, and in the eastern Baltic part other two competitors fight for the market – the Finnish Silja Line (together with a subsidiary Sea Wind) and the Swedish Viking Line. Scandlines ferries carried about 20 mill. Passengers per year, Stena Line – 18,5 mill., Viking Line – 5,4 mill. and Silja Line – 4,8 mill.

Transportation by ferries brings income of three types: from passenger transportation, from car transportation and from trade and services, rendered in ferry shops, restaurants, etc.

3. ANALYSIS OF PASSENGER TRANSPORTATION BY LITHUANIAN SEA TRANSPORT

3.1. Ferry Lines

Ferries from Klaipėda go to Kiel, Mukran (Germany), Aarhus (till April of 2002), Copenhagen, Fredericija, Aabenraa (Denmark), Karlshamn (Sweden) (from April of 2002).

The ferry line Klaipėda – Mukran (Germany) was opened in 1987. This line transports passengers, motor vehicles and also railway wagons. On 13 February 1998, the Danish ferry „Belard“ moored in Klaipėda international sea crossing; it used to run from Klaipėda to the Danish town Aabenraa and back twice a week. It could carry 50 motor vans and 24 passengers. This ferry line was opened on Danish businessmen's initiative. This is related with ever strengthening political and economical relations between Lithuania and Denmark. Presently, „Scandlines“ AG ferry „Sea Corona“, capable of carrying 12 passengers, runs by this line.

The ferry line Klaipėda – Kiel was opened in 1989. Currently, 3 cargo-passenger ferries, „Šiauliai“, „Palanga“ and „Svealand“, run by this line.

The ferry line Klaipėda – Aarhus was opened in 1993. The ferry „Šiauliai“ was running by it. This line was closed in April of 2002. Instead of this line, on 19 April 2002, the line Klaipėda – Karlshamn was opened. The cargo-passenger ferries „Kaunas“ and „Šiauliai“ run by this line.

The ferry-line Klaipėda – Stockholm was opened on 10 June 1997. The cargo-passenger ferry „Palanga“ was running by this line.

Presently, ferries from Klaipėda port transport passengers, motor trailers, railway wagons, cargo trucks and cars to Germany, Denmark and Sweden.

For servicing ferry lines Ro-Ro type ships are used. The distinguishing feature of these ships is as follows: self-propelled vehicles (cars, trucks, etc.) enter and leave the ship on their own. If only ferries carry semi trailers, without trackers, they are tracked into and out of ferries. For passenger transportation cabins are installed in ferries. A number of cabins depend upon a size of a ferry and a nature of services to be rendered. For instance, in case the navigation company is intended for servicing short distance routes and is oriented towards passenger transportation, it will exploit high-speed type ferries (catamarans, ships on air-cushions). Traveling by this route is usually not long lasting, therefore, instead of individual cabins, one big hall, accommodating several hundred people, is installed.

Ferries, servicing the state Klaipėda seaport, are more oriented towards cargo transportation and are not so speedy as passenger ferries; furthermore, traveling usually lasts for more than 8 hours, therefore rest cabins for ferry-drivers and passengers are necessary.

3.2. Analysis of Flows of Passengers

Flows of passengers transported by ferry lines are covered under the Table 1.

Table 1. Dynamics of the number of passengers transported by different ferry lines in the period 1998-2002

Ferry line	Passengers transported					1998 and 2002, compared in %
	1998	1999	2000	2001	2002	
Klaipėda – Mukran	23 526	18 716	27 620	10 919	9 698	41,2
Klaipėda – Kiel	22 739	29 659	50 959	66 016	64 067	281,7
Klaipėda – Karlshamn (until April of 2002 – Aarhus)	2 268	3 077	3 612	20 218	29 742	1311,4
Klaipėda – Aabenraa	418	1256	1724	1892	1951	466,7
Klaipėda – Stockholm	14 564	17 432	19 971	590	0	0
Total	63 517	70 140	103 886	101 177	107 202	168,8

As the data covered under the Table 1 show, individual ferry lines transport different flows of passengers. The largest number of passengers – even 59,8 % - was transported in 2002 by the ferry line Klaipėda – Kiel. Flows of passengers transported by this line increased even by 281,7 % within the period 1998 – 2002.

Flows of passengers towards Aarhus were not intense – in 1998 – 2 268 pass., in 2000 – 3 612 pass. After this line had been closed and the line towards Karlshamn had been opened, the flows considerably increased and in 2002 made up 29 742 pass., i.e. even by 131,4 % more than in 1998 towards Aarhus.

Flows of passengers towards Mukran decreased – in 1998, 23 526 pass. were carried in this direction, and in 2002 – only 9 698 pass., i.e. this number reached 41,2 % of the 1998 year level.

Flows of passengers towards Aabenraa are not high, however, they are constantly increasing – in 1998, 418 passengers were transported, in 2002 – 1 951 pass., i.e. the number of passengers increased by 466,7 %.

The total number of passengers transported by all lines per the period 1998 – 2002 considerably grew up from 63 517 up to 107 202 pass., i.e. by 168,8 %.

Table 2. Dynamics of loading and landing of road vehicles in Klaipėda state seaport

	Year				
	1995	1997	1998	1999	2000
Road vehicles, loaded, pcs.	32 514	55 332	45 877	37 332	46 107
Cargo vehicles	1 211	1 544	1 696	1 745	1 505
Trailers and semi trailers	17 157	38 314	28 296	18 675	21 992
Trackers with semi trailers	10 581	11 483	10 929	12 027	17 361
Cars	3 517	3 517	4 481	4 393	4 661
Other road vehicles	48	474	475	492	588
Road vehicles, landed, pcs.	6 908	103 986	87 260	52 314	60 174
Cargo vehicles	2 374	3 503	3 739	2 895	3 338
Trailers and semi trailers	17 248	38 821	28 046	19 632	22 006
Trackers with semi trailers	11 457	12 808	11 404	12 194	18 764
Cars	37 860	47 757	42 812	16 738	14 901
Other road vehicles	114	1 097	1 259	855	1 165

In 2001, statistic data processing was modified. The number of wagons, road vehicles and cargo vehicles transported in 2002 is covered under the Table 3.

Table 3. Number of wagons, road vehicles and cargo vehicles transported by ferry lines in 2002

Ferry line	Wagons, transported, pcs.	Road vehicles transported	
		Total	Cargo vehicles and trailers
Klaipėda - Kiel	0	62 284	50 098
Klaipėda – Kopenhaga (Federicija)	0	21 015	18 224
Klaipėda – Karlshamn Klaipėda – Aarhus (until April of 2002)	0	15 558	14 140
Klaipėda – Aabenraa	0	11 530	9 740
Klaipėda – Mukran	4 688	10 047	6521
Total	4 688	120 434	98 723

In 1995, 101 603 road vehicles were transported. In 1997, the number of the road vehicles transported was the largest – even 159 318. In 2002, 120 434 road vehicles were transported, i.e. by 18,5% more than in 1995 m. Furthermore, in 2002, 4 688 wagons were transported by the line Klaipėda – Mukran

3.3. Forecast of Extent of Passengers, Transported by Ferries

The forecast of extent of passenger transportation for the period till the year 2015 was performed; The forecast of volumes of passengers, carried by all ferry lines for the period till 2015 (taking into account the time factor).

1998	1999	2000	2001	2002	2015
Fact data					Forecast
63 517	70 140	103 886	101 177	107 202	266 795

The regression equation was used for the forecast:

$$y = 11840.7t + 53662.3, \tag{1}$$

where t – tendency time factor.

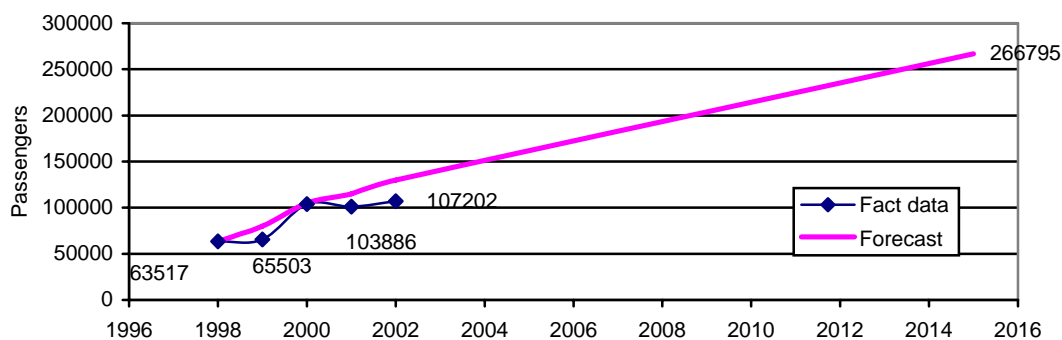


Figure 1. Forecast of volumes of passengers, transported by ferries

As the Figure 1 illustrates, flows of passengers are supposed to grow up to 266 795 passengers till the year 2015, i.e., as compared with the year 2002, the number will grow by 2,6 times.

3.4. Forecast of Extent of Road Vehicles, Transported by Ferries

The forecast of extent of road vehicles, transported by all types of ferries, for the period till the year 2015 was performed (taking into account the time factor).

1995	1997	1998	2002	2015
Fact data				Forecast
101 603	159 318	133 127	120 434	140 137

The regression equation was used for the forecast:

$$y = 377.2692308t + 125913.9231, \quad (2)$$

where t – tendency time factor.

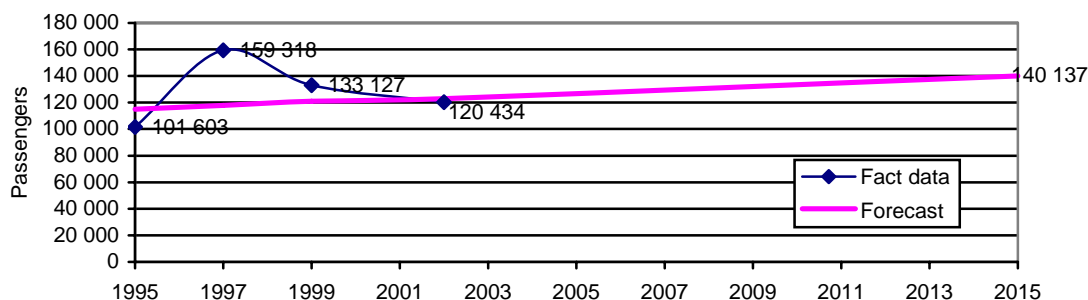


Figure 2. Forecast of volumes of road vehicles, transported by ferries

As the Picture 2 illustrates, volumes of road vehicles, transported by ferries, are supposed to grow up to 140137 pcs. till the year 2015., i.e., as compared with the year 2002, the number will grow by 1,16 time.

4. TRENDS OF DEVELOPMENT OF PASSENGER TRANSPORTATION BY SEA FERRIES

According to the forecast, loading of road vehicles into Klaipėda port ferries should grow up by 1,44 time till the year 2015 and should make up 66 797 pcs. per year.

According to the same forecast, landing of road vehicles in Klaipėda port, contrary to loading, should decrease by 1,54 time till the year 2015 and should make up 38 867 pcs. per year. Such forecast of decrease was determined by the fact that a number of cars brought to the port is constantly decreasing – in 1997, 47 757 cars were brought, and in 2000 m. – this number amounted only to 14 901 pcs., i.e. the number of cars brought during this period decreased even by 3,2 times.

While developing transportation by ferries from Klaipėda, a perspective line towards Swedish port Oxelösund should be born in mind. In the latter port a new cargo pier should be installed, branch railing should be tracked – for this purpose a support form the European Community could be expected. Construction works could be performed per year.

Costs would be compensated, if a ferry sailed with a load of 20 railway wagons and 30 trailers twice per week. If the ferry line load made up more than 50 %, the line would be cost-effective. This ferry line would be analogous to the Klaipėda-Mukran line, but they would not compete with each other.

Other perspective ferry line from Klaipėda goes towards the southern Swedish port Karlskron. Currently, thousands of passengers from Lithuania, especially in summer time, use the ferry line Gdynė (Poland)-Karlskrona. In this line the company STENA LINE in 2001 launched the second ferry and built a new passenger terminal. One ferry, belonging to this company, transports about 130 thou. passengers by this line per year; according to the company's plans, the second ferry from the new terminal should service the analogous flow of passengers. It should be noted that even 80 % of passengers from Sweden come to Poland to do the shopping – thus, Klaipėda and Lithuania could seem attractive to them. In this ferry line a constant flow of Lithuanian car drivers could be expected, as in this case they should not have to cross Poland even until Gdynė, and from Karlskrona they would reach all the southern Sweden, could go further towards Stockholm (the line Klaipėda-Stockholm was closed in 2001), and also to Denmark (after the bridge between Stockholm and Copenhagen in Denmark was built, it is convenient) or towards to Norway.

The perspective ferry lines are also towards Rotterdam in Holland and towards Bremerhafen or Hamburg in Germany.

Presently, a ferry shipping line from Klaipėda towards Swinoujscie (close to Szczecin, Poland) is planned to be opened – for this purpose an operator is being looked for.

When establishing new shipping lines, it is essential to foresee which passenger groups are planned to be serviced and what kind of cargo will be transported, as the total flow of cargo between

the East and the West undergoes slight changes and these changes are mostly effected by various prohibitions or their suspension.

New navigation lines from the specific Baltic sea eastern port always effect other shipping lines, a part of the cargo flow in that port moves from one line into the other one, when owners of the cargo in new lines acquire temporary privileges and reservation places in future.

When forming flows of passengers in ferry liens, the essential issue is cooperation with tourist companies. For instance, the company STENA LINE, to attract flows of passengers in the line Gdynë-Karlskrona, started contacting with about 350 traveling agencies in Poland.

Another important issue is differentiation of tickets for both individual passenger groups and road vehicles, and also different ticket packages.

The most perspective ferries from Klaipėda are high-speed ferries (when duration of traveling does not exceed 8 hours), transporting road vehicles as well.

One more significant issue, when forming flows of cargo, passengers and road vehicles by ferry lines through Klaipėda port, is attraction of transit flows from Russia, Belarus, Ukraine and other countries. For this purpose, specific marketing programs should be established and later, by means of logistics centre, implemented.

5. CONCLUSIONS

The market of transportation by ferries is one of the most perspective and the most developing markets in international navigation. Transportation by ferries within the Baltic Sea in the international market is the most intensive in the world. This is determined by not only a high number of ferry lines – about 80, but also a high number of ferry journeys that is constantly increasing.

43 % of the world car transportation, 30 % bus transportation, 23 % cargo trackers and 20% passenger transportation are concentrated in the Baltic Sea. In the major ferry lines cargo transportation exceeds 40 mill. tons per year.

Within the Baltic Sea region the united navigation politics and the common sea EC servicing market has been formed for many years. Integrating processes provide harmonization of competitive terms within the EC, development of coastwise transportation, etc.

Transportation by ferries yields three types of income – from passenger transportation, from vehicle transportation and trade („duty-free“) and passenger services. Most Baltic States, since the moment of entering the European Community, are striving for letting navigation companies to preserve duty-free trade in ferries for more 6,5 years.

Klaipėda is a perspective port for new ferry lines. The research shows that the most perspective new ferry lines link Klaipėda with Swedish ports of Oxelösund and Norlkskrona, the Dutch port of Rotterdam, German ports of Bremerhaven or Hamburg and Polish port of Swinoujście (close to Szczecin).

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