

# Problems of adapting Polish ports for ferry shipping services on the Baltic Sea

## Preface

Integration processes in world trade and development of land and sea chains of transport<sup>1</sup> have changed fundamentally the role and importance of sea ports. In land and sea chains, ports have become transformed from the first or last points of sea travel into parts of fast and efficient indirect chains of cargo transport. Integration

in world trade and transport has influenced and extended the meaning of sea ports from their function as a transport node dependent mainly upon the economics of its country into a function as an economics centre servicing international cargo exchange and different activities of a trade character.

The efficiency of land and sea chains of transport depend mainly upon the sea port as a land and sea interface of the transport chain and as a place, where international transport meets national transport.

The choice of port is dependent upon not only the cost of transport and its frequency and regularity of services, but also the network of land connections with the port.

The meaning of sea port within the transport chain consists of:

- "correlated adaptation port system to two contact areas – sea shipping and transport system of hinterland,
- regulation by the port system all technical, organizational and economical differences, taking place between land and sea part of transport chain."<sup>2</sup>

Growing competition within the market means that sea ports try to ensure the quality of services are as high as possible, in order to act efficiently. Competition in the market impacts upon a lot of factors of economic, technological and organizational character, which can be include:

- constant modernization and development of service equipment,
- adaptation to efficient and safe service of ships, cargo and passenger movement,
- fast and effective transport connections with economic hinterland,
- equipment in reloading posts of high output, adjustment for modern technologies of sea and land transport,
- delivery just in time,
- fast reaction on changing needs,
- price competition,
- safety,
- reliability,
- comfort of services.

To be competitive on all land and sea chains and to hold this position in countries in the market place, it is important for

ports to take the role of logistics centre for distribution,<sup>3</sup> which makes for the better use of transport, better service of distribution processes, storage, completion, reloading and other concurrent services. It is essential however, that the following conditions are met:<sup>4</sup> assured convenient parking area and efficient transport connections with hinterland,

modern equipment and technical infrastructure, for efficient collecting, transformation and distribution of information.

## 1. The biggest ferry terminals on the Baltic Sea

Ferry terminals on the Baltic Sea and in EU countries, are taking complex and long-term activity in order to secure their position within the national and international market of port services, among others things: by shaping and strengthening transport connections with the hinterland and creating there own representatives and promotional offices. On the Baltic Sea the best developed ports are those of Sweden, Finland, Denmark and Germany. The biggest ports of these countries are:

- in Sweden: Göteborg, Stockholm, Trelleborg, Helsingborg, Malmö, Ystad, Nynäshamn, Umeå, Oxelösund, Karlskrona, Nyköping, Kalmar, Gävle,
- in Finland: Helsinki, Turku, Kotka, Hamina,
- in Denmark: Copenhagen, Helsingør, Århus,
- in Germany: Kiel, Lübeck – Travemünde, Rostock, Wismar.

The biggest centers of ferry shipping, however have developed in the following ports: Helsinki, Stockholm, Trelleborg, Helsingborg, Malmö, Göteborg, Copenhagen and Travemünde – Lübeck.

Ferry terminal	Number of ferry positions
Helsinki	17
Göteborg	15
Kiel	15
Helsingborg	13
Malmö	11
Kotka	7
Stockholm	7

Source: Containerization International Yearbook 1999, s. 33 – 69

**Tab. 1: Ferry terminals on the Baltic Sea having the biggest number of ferry positions**

Scandinavian and German ports are modern centers equipped with convenient infrastructure and having road and rail connections with hinterland. Thanks to this they are competitive and offer on the Baltic Sea, a very high level of ferry services.

One of the largest ports of Scandinavia is the Swedish port of

Göteborg – the so-called “continental bridge” - connecting Scandinavia with the rest of Europe, with some 44 lines. It services about 2 million passengers and 10 million tons of cargo each year.

The port in Helsinki is the largest port of Finland and the largest port in the Finnish Gulf. It has six ferry terminals, in which is serviced more than 9 million passengers each year.

The Swedish Port Trelleborg is one of the biggest ports in Scandinavia, servicing every year more than 2 million passengers and more than 10 million of tons of cargo. Twelve ro-pax ferries regularly call at the port from Rostock, Travemünde and Sassnitz.

The biggest port in Denmark is port of Copenhagen. It services 24,000 ships every year. At present the port is building a new ferry terminal, which will be able to service three ferries at the same time and more than 1 million passengers every year.

German ports of the South and West Baltic, particularly in Sassnitz and Rostock, are competition for Polish ports, because of a common economic and transport hinterland leading from Trelleborg to the East through Mukran and Klaipeda. Costs of development and modernization of the port in Rostock (after the union of East and West Germany) were about 100 million DM.

## 2. Ferry terminals of the South and East Baltic

The ports of South and East Baltic: Estonia, Latvia, Lithuania and Russia, for the moment are not competitive with Poland. They are characterized by their transit character, because they were appropriated to service the foreign trade of the former Soviet Union as the whole of country. At present they play an important role in servicing general cargo.

Estonia is one of three countries situated in the North of the Baltic region. In Estonia there is only one ferry terminal in port in Tallinn – Tallin City Port, serviced by ferry lines with the port in Helsinki.

In Latvia there are two ferry terminals; in Riga and Liepaja, servicing ferry lines to Stockholm and Karlskrona. The ferry terminal in Riga is adapted for servicing cargo and passengers, whilst the terminal in Liepaja services only cargo ferries.

Lithuania has only one ferry terminal in Klaipeda. Despite the fact that it is not the biggest port in the Baltic Sea, it is very important not only for Lithuania, but also for all of the Far East region. This has resulted from the fact that Lithuania, as one of three former republics of former Soviet Union, is the most southerly of the three and lies in the area, that, as opposed to Latvia and Estonia, does not freeze during winter. The port of Klaipeda is also only a relatively short distance from Western Europe. The port in Klaipeda can also accommodate ships to 200 m of length and max draft – 10,5 m.

Russia has a ferry terminal in the port of St. Petersburg which plays a large role for the country. The port possesses sufficient depth for calls by large ships and has a network of connections (mainly rail) with the hinterland of the rest of the country.

## 3. Ferry terminals in Poland

Poland has very profitable geographical position on the Baltic Sea, lying on the route of the European Transport Corridor North – South and has very short distances to and from Scandinavian countries. There are three ferry terminals in Poland: passenger – car – rail in Swinoujscie, passenger and car in Gdansk and passenger and car in Gdynia. More than 80% of passenger ferry movements passing through Polish ports is concentrated in the ferry terminal in Swinoujscie. At present it is the only ferry terminal in Poland which is well prepared for servicing passengers and cargo. The terminal is the oldest in Poland, built in 1964 and then serviced just one passenger and car ferry to Ystad (in Sweden). In 1988 a modernization of the terminal begun, that included rebuilding of two wharfs, building the next three and building a new passenger terminal, comfortable for servicing motorized passengers. The modernization lasted six years and on the 9th of June 1994 was opened, with at present five wharves (Tab. 2). It is one of the most modern terminals on the Baltic Sea and it is comparable to ferry terminals in Helsinki, Ystad, Travemünde, Stockholm or Sassnitz. In addition, it is the only terminal in Poland which has a wharf for car and rail ferries. The terminal can service:

- every day – 15 car and rail ferries and from 4-5,000 passengers,
- every year – 850,000 passengers, 150,000 cars, 100,000 trailers and 60,000 rail wagons.

Nowadays ferries of ship owners; Unity Line (to Ystad) and Polish Steamship Company [PZB] (to Copenhagen and Rønne [seasonal] in Denmark and to Ystad) depart from Swinoujscie. A major factor for the development of ferry movements in Swinoujscie will be the building of motorway A3, leading from Szczecin by way of Swinoujscie, Zielona Gora, Legnica to Prague (in the Czech Republic). Unfortunately this has not been ratified by EU, as it did not satisfy standards of the Union.

Number of wharfs	Characteristics
6	<ul style="list-style-type: none"> <li>■ capable of handling cargo vessels (ro-ro and lo-lo)</li> <li>■ total length 130 m</li> <li>■ max. draft 7,30 m</li> </ul>
5	<ul style="list-style-type: none"> <li>■ total length 200 m</li> <li>■ max. draft 7 m</li> </ul>
4	<ul style="list-style-type: none"> <li>■ capable of handling passenger ferries, ro-ro vessels and cruises</li> <li>■ equipped with a ramp for vehicles and a gallery for boarding passengers</li> <li>■ total length 206 m</li> <li>■ max. draft 7 m</li> </ul>
3	<ul style="list-style-type: none"> <li>■ total length 197 m</li> <li>■ max. draft 6,70 m</li> </ul>
2	<ul style="list-style-type: none"> <li>■ capable of handling truck/railway and passenger ferries, ro-ro vessels and cruises</li> <li>■ equipped with two loading ramps for trucks and wagons and a gallery for boarding passengers</li> <li>■ total length 163 m</li> <li>■ max. draft 7 m</li> </ul>

Source: Author's interpretation of Polish Port Handbook 1999, Maritime Economy and Industry Guide, Szczecin 1999, p. 208.

**Tab. 2: Characteristics of wharves of Ferry Terminal in Swinoujscie**

Apart from the terminal in Swinoujscie, the ports in Gdansk and Gdynia are also involved in ferry services. These ports besides Göteborg in Sweden, are the biggest complex of ports in the Baltic Sea and are fundamental to the meaning of ferry shipping. From Gdansk and Gdynia run the shortest road and railway connections from Scandinavian countries to the main cities in Poland: Warsaw, Lodz, Katowice, Krakow and to the countries of Middle and Eastern Europe. Beside this, these ports are situated on the route of a major European transport corridor, connecting countries with a large economic hinterland: Slovakia, Eastern Czech Republic, Hungary, Greece, Bulgaria and Turkey, covering about 96 million people and countries belonging to the Eastern part of the hinterland of Byelorussia and Western Ukraine, including in sum about 30 million citizens. Despite such a big potential for ferry transport, the ferry terminals in Gdansk and Gdynia do not fulfill any of the present requirements.

The terminal in Gdansk was built in 1973. It is situated in the Inner Port located on Port Channel at the mouth of the Dead Vistula. The main terminal is located on Ziolkowskiego Wharf of Port of Gdansk (Tab. 3). It has only one position, which can service only one passenger and car ferry of 4000 RT. On Oliwskie Wharf is the ferry terminal for passenger and car ferries of 12000 RT, which can service up to 0.4 million tons of cargo every year. On the wharf can also be serviced ro-ro, lo-ro and lo-lo vessels. Every year the ferry terminal is able to service only tens of thousands of passengers. In order for the terminal to act still and fulfill its duties fully, it is necessary for its modernization, but to achieve this it needs very large capital expenditure.

Nowadays the terminal services two ferries of PZB, sailing to Nynashamn in Sweden.

Wharf	Total length [m]	Max. draft [m]
Ziolkowskiego	132	6,5
Oliwskie	340	6,5

Source: Author's interpretation of Polish Port Handbook 1999. Maritime Economy and Industry Guide, Szczecin 1999, p. 89 - 90.

**Tab. 3: Characteristics of Ferry Terminal in Gdansk**

The Ferry Terminal in Gdynia is the part of the Baltic Container Terminal. It has a contemporary character and possesses only one ferry position at Helskie II Wharf with a length of 130 m and max. draft 13 m. The terminal, in spite of fragmentary modernization, is too small and uncomfortable. At present it is used by Swedish ship owner Stena Line, having two ferries on the line to Karlskrona. The terminal in Gdynia has large future potential for development of ferry shipping because of its location along the transport corridor from Sweden across Poland to the South of Europe and to the Near East. The terminal has to be rebuilt and also needs more space for car parking. The project of rebuilding of the terminal, the so-called *Baltic Ferry Bridge*, prepared within the TEM/TER Scandinavia, plans building four new positions for service of ferries:

- two; for passenger and car units and

- two; for car and railway units, with necessary technical infrastructure. It creates the possibility of synchronous service of five ferries. Costs of investment are between 40 and 50 million US\$.

#### 4. Possibilities and directions of development ferry terminals in Poland

At present both of the ferry terminals in Gdansk and Gdynia do not conform to basic services and they are not prepared for extended service movements. This limits the development of ferry shipping. Planned new investments in order to improve this situation exist. Also planned is the building of a new terminal in Gdansk at the Westerplatte Wharf, which is situated on the historical Westerplatte Peninsula and has direct connection across a new road bridge with the centre of the city and international road to Warsaw. The proposed Ferry Terminal on the Westerplatte Wharf will allow calls of vessels of maximum draft - 9,6 m and length - 225 m. According to the project, the terminal will have three ferry positions with one for railway units.

Factors	Characteristics
length of mooring line	3 x 200 m
Depth	12 / 14 m
surface of terminal gross	ok. 14 h
capacity of fairway group	90 wagons
class of road of access	D 2 / 2

Source: Sea Port of Gdansk.

**Tab. 4: Characteristics of planned Ferry Terminal in Gdansk**

For many years there exists also the concept of building a new terminal on the wharf belonging to Dalmor in the centre of Gdynia. The project consists of two architectonic conceptions, based on the same town-planning foundations. The main object of the terminal is the office of ship owner. At the wharf of length 412 m, will be able to moor, free from the possibility of collisions, two ferries of length 150 m each. The servicing of car and truck transport was planned on two levels. On the upper platform is planned a car park for 400 cars, however below, on six routes, will take place entry and exit movement, free from the possibility of collision.<sup>5</sup> The beginning of the investment is to be in 2003 and cost of the project is about 70 millions of zlotys.

Realization of plans will let for creating competitive connections from Poland for Polish and international tourists and trade of cargo.

#### NOTES

<sup>1</sup> The idea of chain of transport can be in three following senses: "[...] (1) in narrow sense of definition as a connection into one close institutional and inter - institutional transport process, (2) in broader significance as a close transport connection between senders and

receivers of cargo using one or more means of transport with share of needed reloading processes, (3) in more broader significant, included all transport processes from a producer to a consumer – as technical and organizational relation of transport, cargo and storage mechanisms and processes from production of good to their consumption [...].” According to the definition of J. G. Baudelaire, chain of transport jest the sum “[...] of different steps connected with the process of transport from the place source to the place of destination [...].” [S. Szwanowski, *Land and sea chains of transport*, University of Gdansk, Gdansk 1999, p. 17. After: J. G. Baudelaire, *Port Administration and Management*. IAPH, Tokyo 1986, p. 21.]

<sup>2</sup> ibidem, p.53.

<sup>3</sup> Logistic centers of distribution are extended objects, having a storage area, transport infrastructure of different brands of transport and reloading and manipulation mechanisms. They have to have access to land and/or sea long distance connections, which are supplied by bring and deliver connections of local character.” [S. Szwanowski, *Adaptation Polish ports for standards of UE*. (in) *Strategies of development of sea transport of Poland*. Studies and materials of Institute of Transport and Sea Trade. University of Gdansk, Gdansk 1998, p. 112.]

<sup>4</sup> ibidem, p. 12.

<sup>5</sup> Com.: E. Grunert, *New terminal in Gdynia?* “Bearings for Sea and Trade” February 2002 Nr 4/579, p. 7.

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