

B.J.L. Kuijpers *Utilisation study RoRo-Shipping market, North Sea and Baltic Sea area*
Internship, Report 2000.LT.5279, Transport Technology, Logistic Engineering.

This report describes the utilisation study performed during my stay at Chalmers University of Technology in Gothenburg, Sweden. This study was performed for DFDS Torline. DFDS Torline is a RoRo-shipping company operating in the North Sea and the Baltic Sea area. The scope of the research is the freight traffic between Norway, Sweden and Finland on one hand and Great Britain and the east and western European mainland on the other.

The main questions in the report are:

- What is the current utilisation of the RoRo-shipping routes in the area?
- What is the best new option for a new route for DFDS Torline in the Baltic Sea?

The key parameter in the research is lane length, this is a figure used to describe the freight capacity of a RoRo vessel. The utilisation can be described as used capacity divided by the available capacity. The available capacity is taken from the RoRo database [B.J.L. Kuijpers *Ro-Ro-Database Report. A description of the database*, [report 2000.LT.5280](#), Department Transport Technology, Delft University of Technology] while the used capacity is taken from the information available from Shippax. This Shippax information is given in number of trucks instead of lane meters. Therefore a calculation has to be performed to convert this to used lane meters. This is a simple calculation of multiplying the number of trucks by the average truck length. This average truck length is calculated using the following assumptions:

- The smallest maximum allowable truck length of one off the port states is used and all trucks are actually this maximum length.
- On a shipping route, 50 % of the transported trucks is Nordic, 25 % is port state and the other 25 % is rest of Europe. This is of importance because of the statistical distribution between semi trailers and articulated lorries.

With these assumptions in mind the average truck length is calculated using figures about the number of trucks and statistical distribution between semi trailers and articulated lorries. Results can be seen in table 2.2 on page 8 of the report. The grand average is 18:30 meters.

Now that the average truck length is known, utilisation calculations can be performed. The results are given detailed in chapter 2, paragraphs 2 and 3. To summarise the following conclusions can be drawn for the North Sea Area:

- Short routes with frequent sailings have got a low utilisation figure for pure freight traffic because of the mixed usage of these ships. A lot of the capacity is used by cars instead of trucks.
- There is a clear midsummer dip in the utilisation because of the summer break when companies have a lower output than during the other periods.

For the Baltic Area the following conclusions can be drawn:

- There is a clear continuous growth in the utilisation factors because of the economic recovery after the Russia crisis in 1998.
- Poland and Estonia show the highest utilisation factors. This because those two countries have got the strongest growing economies.
- Clearly the Latvian and Lithuanian economy were more influenced by the Russia crisis in 1998 than the Estonian and Polish economy. The last two mentioned are more orientated on the European Union.

. The new route advice is funded on the following factors:

- Market size and utilisation (using the previous chapter)
- Economic situation (expressed in GDP, import and export) and political situation
- Available Infrastructure (only hinterland, not port site)

Most of this data was collected from the World Bank and reports about political and infrastructural situation in those countries. The results of the research can be presented in a table as presented below.

<i>County</i>	<i>Market size</i>	<i>Utilisation</i>	<i>Political situation</i>	<i>Economic situation</i>	<i>Infrastructure</i>
Estonia	+	+	+	+	+/-
Latvia	+/-	-	+/-	+/-	+/-
Lithuania	+/-	+/-	+/-	+/-	+/-
Poland	+	+	+	+	+
Russia	-	-	?	-	-

The conclusion of the new route advice becomes clear from the table. Poland is the most favoured option. It is the biggest market, strongest economy,

political stable and has got moderate to good infrastructure. Estonia is the second best option. The problem is some ice during winters.

[Reports on Logistic Engineering \(in Dutch\)](#)

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