Consequences of new restrictions on emissions for countries depending on sea transportation and for shipowners

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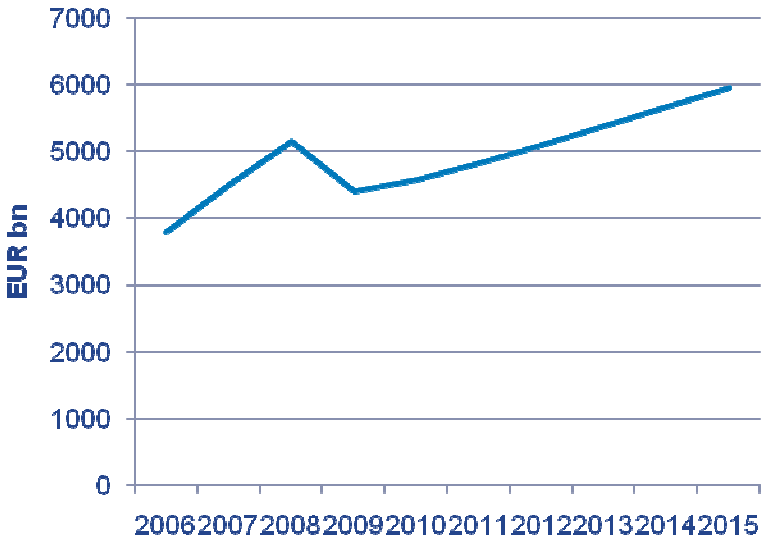
Uwe Bakosch

President/CEO, Finnlines Plc

Baltic Sea Transports

About 30 RoRo-, RoPax- & Ferry short-sea-shipping comanies

Baltic Sea States GDP *)



*) Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden

Source: International Monetary Fund (2010) - World Economic Outlook Database

Approx. 8% of the world trade takes place on the Baltic Sea![1)]

This equals to 620 million tons of freight[1)] on only 0,12% of the area of all oceans. Experts expect 4% growth p.a. for Baltic Sea transports.

Source: 1. Ostseeinstut für Verkehr, Marketing und Tourismus / University of Rostock

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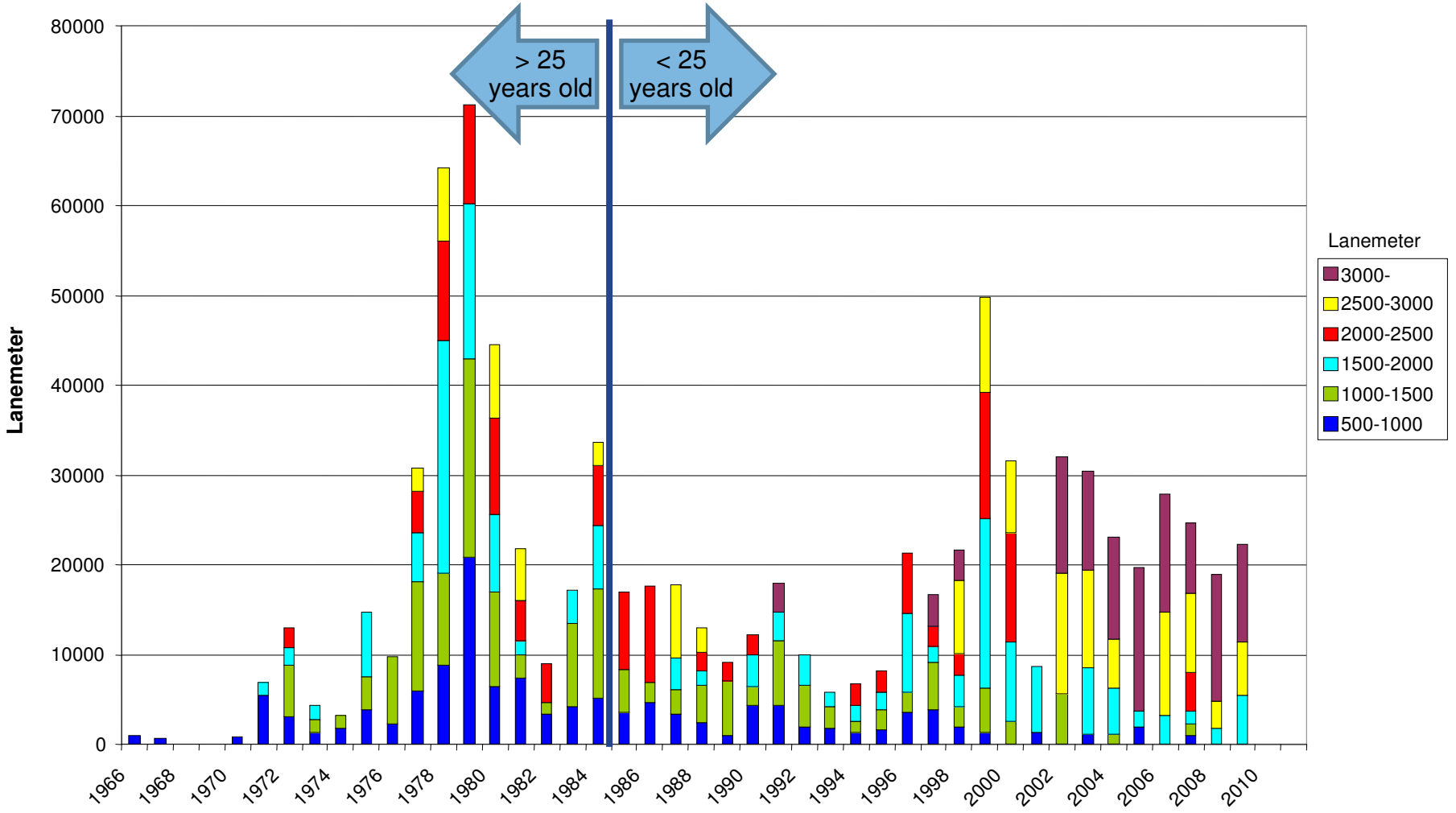
50% of the worlds RoRo-vessels are older than 25 years. After 2002, the biggest part of newbuildings has a capacity of >3.000 lanemeters

RoRo tonnage age profile



Source: Fearnleys

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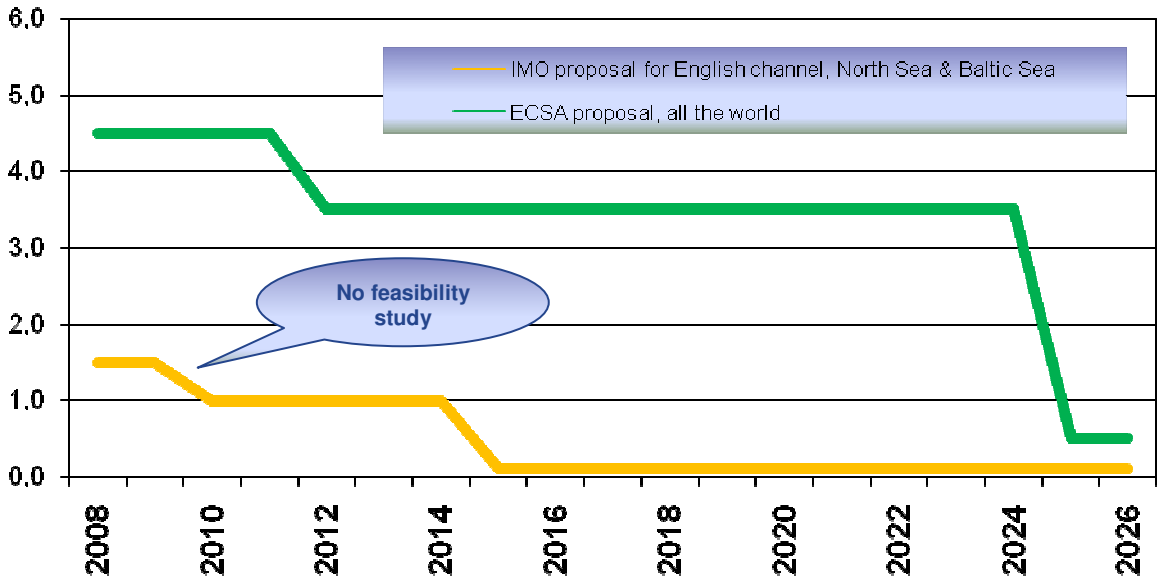
Further development



Facts:

- From 2015 onwards 0,1% SOx restriction in Sulphur Emission Control Areas (SECAs)
- From 2020/2025 onwards 0,5% SOx restriction worlwide

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Critical consequences on new restrictions related to Baltic Sea states (I)

Not only shipping companies and harbours affected, but great economical impacts for Baltic neighbouring countries:

- Transport costs to/from Baltics will increase from 2015 onwards. 2/3 of the shipping companies operating at the Baltic Sea expect an increase per transported unit between 25 and 50%.[1)]
- Increasing transport costs will have macro economical consequences:
  Im- and exportability of Baltic Sea surrounding countries will suffer dramatically. Especially Finland is affected to a large extent with its de-facto island status as transports have to be routed via Russia or the Baltic Sea. Same principals also apply for Sweden or Latvia.
  The im- and exportability of these countries depends highly on efficient sea transports. The Stora Enso CEO Mr. Jouko Karvinen, cited in an article of the Finnish Newspaper "Helsingin Sanomat" on 2.3.2011, estimates that additional costs for Finlands export industry over 1 billion EUR could even put an end to the forest industry in Finland.[2)]

Sources: 1. Unicredit (2010) – 5th Maritime Trend Barometer, Hamburg, December 2010
2. Helsingin Sanomat (2011) – Rikkimääräys lopettaa metsäteollisuuden, Helsinki, 02.03.2011

Critical consequences on new restrictions related to Baltic Sea states (II)

- Macro economical consequences not restricted to Northern European countries: also northbound exports, for instance from Germany, will be more expensive and unattractive for buyers in Northern Europe.
- Before the decision of the Marine Environment Protection Comittees 57th meeting (MEPC57) the shipping companies thought, a 0,5% SOx restriction would be applied. The branch had already prepared for this and therefore already accepted a massive increase of fuel costs.
- From an eco-political view it is important to mention, that the enduring use of HFO with 3,5% sulphur emission on the oceans and even in the Mediterranean and Irish Sea will destroy our efforts in the Baltics, since the Baltic Sea is no closed eco system and the emission will not stop at our borders. Furthermore the emission of CO2 from road traffic will exponentially increase due to the shift of goods back to the roads.

Potential for improvement

The real potential for improvement is based on efficient fleet management and modernity of vessels:

- **hydrodynamics**
- **modern engine technology**
- **modern propeller and rudder design**
- **all combined with high cargo intake**

Picture: MV Finnbreeze, delivered on 10.03.2011 and MV Finnsea delivered on 30.03.2011.

- **MV Finnsky, to be delivered in Q4/2011**
- **MV Finnsun, to be delivered in Q4/2011**
- **MV Finntide, to be delivered in Q4/2012**
- **MV Finnwave, to be delivered in Q4/2012**

Classification: RINA
Passengers: 12
Ice class: 1A
Flag: Finland

RoRo-Capacity: 3.326m
LoLo-Capacity: 20'-398pcs
30' - 314 pcs
40'/45' - 181 pcs
Reefer plugs: 75
Car capacity: 5.571m²
on hoistable car deck area
or about 600 cars

Internal ramps:
ud-wd B 4,8m
angle 7,8
deg.md-ub B 6,3m
md-tt B 4,2m

Main engines: 2x10.000 kW
Aux engines: 2x 1.110 kW
Service speed: 21 kn

Stern ramps:
ud LxB 16+3x6m
md LxB 16+3x13,2m
Ramp capacity:
Stern ramp main deck 120 ton. (roll trailer)
Stern ramp upper deck 60 ton. (roll trailer)

Length overall: 188,4m
Beam: 26,5m
Draft: 6,9m

ud-wd B = upper deck - weather deck Breadth
md-ud B = main deck - upper deck Breadth
md-tt B = main deck - tank top Breadth
ud LxB = upper deck Length x Breadth
md LxB = main deck Length x Breadth

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