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Costs, not SECAs make RoRo steam slow

The issue of speed is more complex for RoRo/RoPax vessels than other segments. A Swedish research team has addressed the preconditions for introducing slow steaming in Northern Europe and asked operators in Scandinavian waters how they prepared and have acted under SECA

In the northern European market, RoRo and RoPax shipping services often face direct competition with road and rail options that are generally less safe and more congested and potentially more damaging to the environment. The environmental performance of RoRo shipping is, however, critically dependent on sailing speed, energy efficiency and capacity utilisation. In 2014 the combination of a slow RoRo market, high bunker costs, the upcoming SECA regulations and customers increasingly sensitive to transport's environmental footprint triggered discussions on how the shipping industry could cope with the changed conditions.

Varying the speed is normal procedure in several shipping segments, mainly used for tying up capacity to raise freight rates but also for lowering bunker costs and environmental footprint. This is not very complicated for tank and dry bulk ships transporting low-value cargo for a single or a few shippers. The transport cost is high compared to the value of the goods and fuel costs constitute a major cost for the shipowners. Hence the shipowner and the shipper share an interest in low speed and can negotiate directly. AIS data for 2013–2015 reveal typical speeds of 13–14 knots in the waters around Sweden.

Also trans-ocean container shipping applies slow steaming. In a previous project, the research team asked Swedish shippers how they are affected by slow steaming and a workshop revealed their coping strategies. As a large container vessel mixes a wide variety of cargo with different time requirements, the shipping lines cannot negotiate with all shippers, but one of the world's largest container shippers witnessed that even they were informed about changed timetables without previous dialogue. Slow steaming is particularly troublesome for one of the interviewed shippers, which started to manufacture in Sweden, continued in China and finalised its products in Sweden. When selling them in China they suffered from four slow steaming legs and they had to shift to air freight.

The issue of speed is even more complex for the RoPax vessels than other segments. Bunker costs are less significant compared to time-dependent costs due to expensive vessels and large crews. The variety in demand is also as wide as it gets in the transport industry. Travellers with cars who want to cross the water to continue driving are mixed with passengers who want to eat, shop or just entertain themselves on board. Time-critical cargoes like vegetables, components scheduled for assembly, and e-commerce deliveries are loaded on lorries driven on board by drivers and mixed with less demanding goods loaded in unaccompanied semi-trailers or containers. Revenues obviously stem from the transport service, but there is also a time-dependent element in terms of sales on board.

Hence, scheduling is a big compromise between different time requirements and the compromise differs between routes, time of the day and season. Most customers want a high speed, but on some routes a slow speed is a value added for passengers who want to eat and lorry and bus drivers who want to use the crossing as resting time. To further complicate the issue, a lower speed might force the shipping line to deploy more or larger ships, choose a shorter crossing or skew the timetable between days. Competition with land modes and fixed connection is also likely to be affected. If the speed is significantly changed, the vessel might have to be reconfigured to get the right combination of shops, restaurants, bars, seating areas and cabins. In addition, operating far from the design speed is likely to necessitate rebuilding of the hull, change of propellers and possibly also adjustments to the engines.

Significant inertia

There is thus significant inertia to slow steaming in the RoRo/RoPax segment. According to AIS data, speeds between 20 and 23 knots are common on open waters in the Baltic and North Seas, and some routes involve high-speed ferries like Destination Gotland's, which are built for up to 32 knots. Some years ago, however, SOL marketed its discontinued 14 knots RoRo service between Helsingborg and Travemünde as the »Slowest service in the South Baltic Sea«. The present study indicated that slow steaming is rare in the short sea RoRo/RoPax segment. It was also evident that, like the shipowners, researchers have paid less attention to slow steaming in the RoRo/RoPax segment than other shipping segments. One reason for the research community's reluctance is the contextual character of RoRo/RoPax with conditions shifting between geographical markets, routes and seasons making it hard to generalise results.

The research project was staged in 2013 when high bunker costs made alarmists claim that SECA would force the manufacturing industry to leave the shores of the Baltic Sea and that RoRo/RoPax shipping would be replaced by land modes. Some studies agreed with the alarmists while other analyses for the European Commission did not project any major modal backshift. Together with scrubbers and alternative fuels, slow steaming was put forward as a SECA mitigation strategy. Anyway, the sharp decline in the oil price by the end of 2014 made many of the studies obsolete and the shipping lines opting for just buying MGO looked like winners in the short run. In addition, it made the consequence analyses of SECA, including this one, difficult as the price of MGO dropped even below the price of HFO in mid-2014 and the price gap has decreased.

Nonetheless, for the interviews, 25 RoRo/RoPax companies operating in the North and Baltic Seas were approached and in the end, 11 managers participated in semi-structured personal or telephone interviews. The interviews focused on the companies' SECA compliance strategies, customer requirements, and current practice and future plans regarding slow steaming.

The research reveals that schedule flexibility, transit time and service reliability are crucial for the customers and the demand is highly price elastic. Vessel characteristics, operating route, and the price gap between MGO and HFO are some key parameters for the selection of an appropriate SECA compliance strategy. In the short

run, a majority of the interviewed short sea RoRo/RoPax operators opt for using distillates. Currently, due to plummeting bunker oil prices, using LNG fuel or scrubbers has become less attractive. The study suggests that slow steaming is primarily induced by overall cost considerations and not by SECA compliance. Low bunker prices, customers' increasing demand for shorter lead times, and fierce competition in terms of cost and time between RoRo/RoPax shipping lines and routes as well as with land modes significantly restrict the potential of slow steaming in the North-European short sea RoRo/RoPax sector.

Benefit through alliances

The quest to cut bunker costs and emissions through slow steaming may result in negative ramifications for short sea RoRo/RoPax shipping and its customers by affecting entire supply chains. To benefit from slow steaming employing larger vessels with more cargo on-board each voyage can also reduce the side effects of slow steaming. RoRo/RoPax operators pursuing a slow steaming strategy may gain a competitive advantage over their rivals and attract more customers through service differentiation based on different transit times, reduced freight rates and speed. Strategic partnerships, alliances and sharing the benefits of slow steaming among the passengers and freight forwarders through low fares and fuel surcharges may ensure advantages of slow steaming for the long term. The longer sailing time may be compensated through an efficient management of port operations. In addition, state subsidies and tax rebates may also encourage slow steaming in the sector. For the South Baltic Sea, it will also be interesting to follow the effects of the Fehmarn Belt connection.

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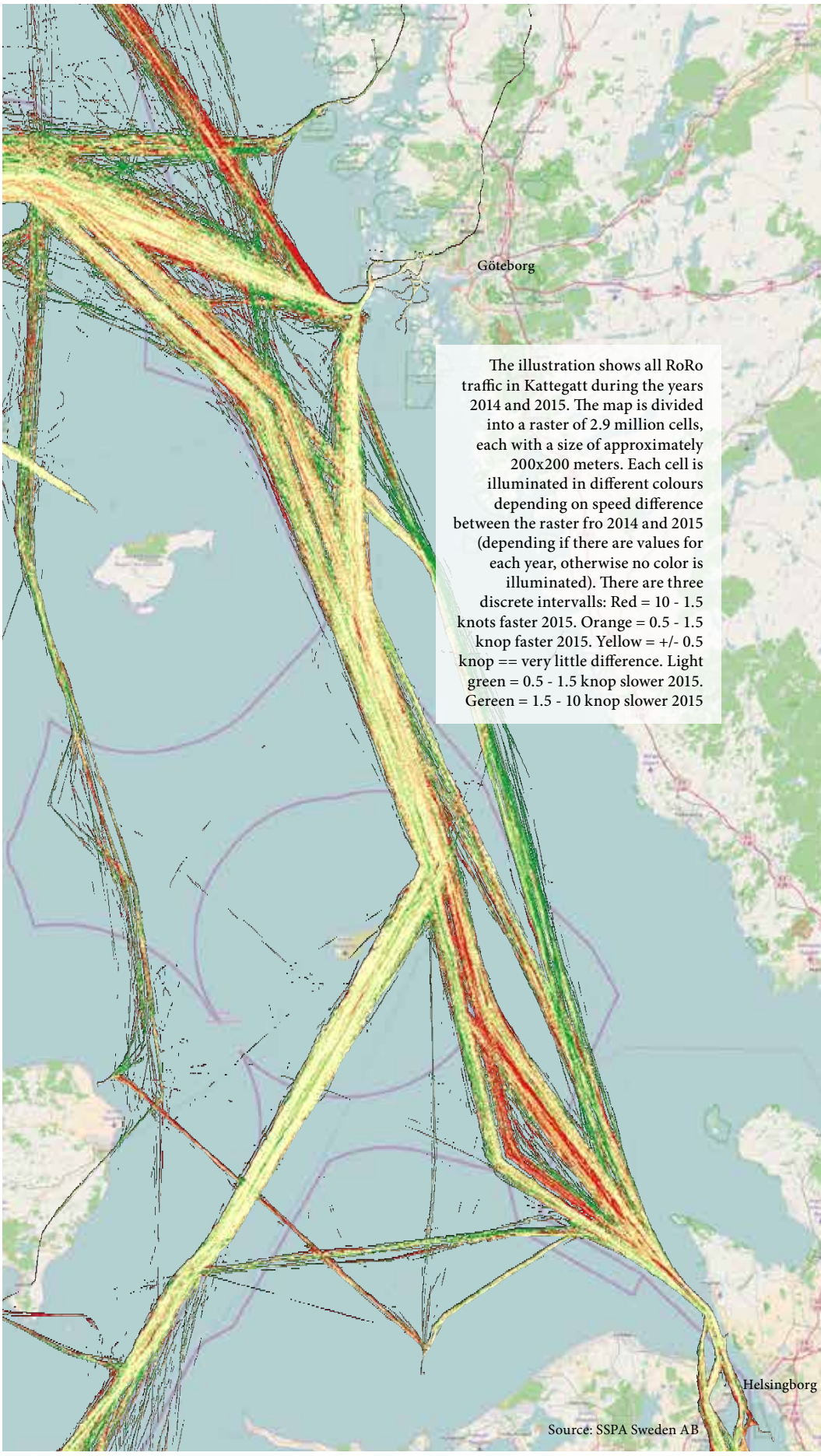

The illustration shows all RoRo traffic in Kattegatt during the years 2014 and 2015. The map is divided into a raster of 2.9 million cells, each with a size of approximately 200x200 meters. Each cell is illuminated in different colours depending on speed difference between the raster fro 2014 and 2015 (depending if there are values for each year, otherwise no color is illuminated). There are three discrete intervalls: Red = 10 - 1.5 knots faster 2015. Orange = 0.5 - 1.5 knop faster 2015. Yellow = +/- 0.5 knop == very little difference. Light green = 0.5 - 1.5 knop slower 2015. Gereen = 1.5 - 10 knop slower 2015