

GROWING MARINE TRADE DEMANDS MORE AND BETTER SHIPS



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GROWTH IN WORLD TRADE AND THE NETWORK ECONOMY are increasing the need for transportation capacity. According to Lloyd's Register-Fairplay Ltd. the world trading fleet totalled 89,960 vessels in 2004. While new ships are being built, some older ships are being re-engined. Engine manufacturers are operating at full capacity.

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The number of ships in the world is increasing and vessels grow in size. Increasing quantities of oil, containers, passengers and cargo are being shipped from one part of the world to another, and the growing fleet of leisure vessels adds to the total. This type of development is expected to continue for years to come. It translates into solid demand for all the products supplied by Wärtsilä Services.

“Instead of investing in new ships, some of our customers are investigating the possibility of re-engining, i.e. updating and converting old vessels that are in good-enough condition to continue in operation for several years. Often this means increasing engine performance by an increase in output or conversions to use different fuel. Wärtsilä’s strategy is to be our customers’ sole product-solution provider. This means that our solution includes everything from project design/installation, services during operation, standard engine services and total ship service including all aspects of crew training,” says **Thorleif Holm**, Regional Sales Director, Wärtsilä Services.

The advantages speak for themselves

Wärtsilä carries out numerous re-engining projects at different global locations every year. In a nutshell, advantages for the customer are: total solution and service from a single outlet at a reasonable investment cost compared to investing in a new ship, short out-of-operation time, technical reliability and long engine life, a long-term service relationship with experts and the guaranteed supply of spare parts. It also means improved environmental properties.

The case of M/S Borden illuminates a live re-engining process from the initial decision making to re-launch of the vessel and a return to business as usual. The project was completed in the summer of 2005.

Re-engining extends a ship’s lifecycle

Re-engining means installing new engines in an old ship. It’s a cost-effective and environmentally-friendly way of improving a vessel’s functionality and extending her years of productive service.

In Europe, the operating time of a ship is reckoned to be 15-25 years. Some four years after launching, a vessel is in her prime. After seven years, the investment in her construction has been repaid. Over the next 7-8 years she produces profit for her owner. At the age of twenty years, vessels are usually sold on, with only the best specimens being kept on longer by the original →



owner. After forty years of service, most ship hulls have done their duty.

The 29-year-old M/S Borden, a RoRo carrier, was one of the lucky ships which its owner, the Finnish shipping company Rederi AB Engship, decided to keep in spite of the fact that the old lady's original main engines had reached the end of their useful life. The decision to re-engine the vessel was based on the fact that her hull was in good condition. There is also great demand for RoRo ships of this type which are equipped with a cargo hold and hanging tween decks suitable for transporting new cars. She also had long-term transportation contracts which required a reliable carrier.

Wärtsilä offered to replace almost all the equipment in the engine room apart from the auxiliary engines, which were originally manufactured by Wärtsilä and still in good condition. Financial calculations showed that re-engineing the M/S Borden would be a more economic solution than buying a totally-new vessel. Depending on the market situation, commissioning a new vessel could take 3-4 years from placing of the order to delivery. By re-engineing the M/S Borden, the owner would be able to have a ship that was practically new in business in just a couple of months.

Many reasons for re-engineing

"The economic feasibility of re-engineing is a function of rising maintenance costs for the original machinery, reduced reliability, a vessel's overall condition, the amount of debt to be amortized, existing shipping contracts and whether the vessel is suitable for the type of transportation intended. A ship's condition

is evaluated by the classification societies and the marine authorities of the flag state, and the decision on whether to proceed is then up to the owner. Sometimes, re-engineing is the right option for increasing transportation speed on a new route," says **Ville Packalén**, Sales Manager, Wärtsilä Services.

"Because competition in the shipping industry

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is tough, vessels must be reliable. Continual engine problems may result in sanctions for late deliveries, interrupted production among receivers of goods and damage to the reputations of both the shipping company and the provider of logistics services," says Packalén.

A new outfit for an old lady

In practical terms, almost the whole of M/S Borden's engine room was modernized. New main engines, gearboxes, fuel and lubrication oil-separator equipment, fuel oil booster units, a central cooler, exhaust gas boilers, silencers and a great amount of other auxiliary equipment were all delivered by Wärtsilä. Installation work and

the required automation upgrade were carried out by other parties. M/S Borden's new main engines are the Wärtsilä Vasa 12V32, a choice based on the fact that the client had earlier experience with the same type of engine in other ships and felt confident about the product. The fact that the vessel's original 524TS auxiliary engines were still in an excellent condition quite naturally supported the idea of selecting Wärtsilä engines.

"In this project we provided the customer with both technology and commissioning. This means that the installation work was carried out in co-operation with the customer's contractors. This is not, however, always the case. We are also ready to provide 'turnkey' installations in accordance with customer needs, but vessels then stay in our shipyard for 100 days and we accept full responsibility for all installation work. After this, the vessel is ready to sail," says Packalén.

"Finally, as part of the contract, the M/S Borden's engine crew was trained to operate the new engine at the Wärtsilä Land and Sea Academy so that they will be able to carry out parts of the service work themselves. This customer has experience of Wärtsilä servicing their engines, but training crews at the Wärtsilä Land and Sea Academy makes them the masters. We believe that the better knowledge each customer has concerning engines and equipment, the fewer the operating problems and the greater the long-term customer satisfaction."

Environmental aspects are of great importance

The Wärtsilä Vasa 12V32 engines installed in the M/S Borden are so called low-NO_x engines, which means that their emission levels are minimal. Environmental aspects are a subject of increasing interest in the shipping industry. In the USA and Canada, ships with high emission levels can already be denied access to ports. In the near future, this may also become true of European ports. By re-engineing, emission levels in old ships can be reduced significantly.

"Another dimension to environmental friendliness is the long lifetime of Wärtsilä engines. They have been designed to last practically forever, since all moving parts are replaceable. If the engines are installed correctly and service programmes are followed in detail, our engines will last for decades. Many Wärtsilä main and auxiliary engines are removed from ships that have reached the end of their lives and taken to the Wärtsilä Reconditioning Workshop. After reconditioning, they are resold, installed in a new "home" and taken into use for the second time. This, if anything, is true sustainable development," says Packalén. ●