A collaboration to help international shipping better manage its fuel resources

Understanding and measuring the composition of the fuel oil is vital. NanoNord A/S and the leading marine classification society, Lloyd's Register, are working on ensuring that fuel oils are adequately pre-treated and then burned in the most efficient manner.

World trade is enabled by shipping. The maritime industry has successfully provided increased productivity to better support world trade, and as global trade volumes have grown, shipping capacity has grown in response.

Reduction of CO_2 emissions is a global concern, and like all other industries the shipping industry is working on reducing its overall emission of greenhouse gases.

Over the last ten years, considerable progress has been made in reducing shipping's emissions to the atmosphere. Today, shipping emits approximately 3% of the world's anthropogenic CO_2. But the task of reducing shipping's overall CO_2 emissions is far from easy, and it is likely to require some radical rethinking as to how the industry operates.

All parts of the industry need to drive this development: shipowners, charterers, shipbuilders, engine builders, classification societies and so on – each contributing with their unique expertise in order to reduce the total emission figure.

Lab-On-A-Ship

Fuel management is a very important discipline on board a ship, both in relation to fuel economy and CO_2 emissions, which makes it necessary to know the fuel composition. Marine fuel oil needs particular care and attention as the composition is of variable standards. Because of this variation, analysing the fuel oil for e.g. sulphur is necessary in order to get the highest fuel efficiency.

Normally, it is a time-consuming and complex assignment to perform these tests, and therefore they are rarely performed. Lab-On-A-Ship is an innovative approach to solving this task. By monitoring fuel oil, lubricating oil and exhaust emission automatically on board the ship, Lab-On-A-Ship provides the ship's engineer with the needed information to optimize the treatment and use of the fuel oil, thus making the fuel consumption more effective.

Practical tests

As a first step, the Lab-On-A-Ship systems were installed on Lauritzen Bulkers AS's Sofie Bulker and Amine Bulker. In parallel, Lloyds Register's Fuel oil and bunker analysis service (FOBAS) service was commissioned to provide in-depth fuel oil management training of the ships' engineers, superintendents and technical management.

Lauritzen Bulkers AS is positive that Lab-On-A-Ship will enable them to optimize their ships' operations, thus reducing both their environmental impact and operating costs. Lauritzen's Technical Manager, Poul Martin Kondrup, is clear on this point:

'Our goal is to extend the on board measurement capability to encompass the highly variable fuels and lubricant quality issues encountered by shipping. This will represent a substantial step forward in making the correct machinery management decisions which enable targeted action, the minimization of waste and impact on the environment.'

The Lab-On-A-Ship project is being piloted on other ships. Initial findings are expected by early 2010.

Project facts

Category: **Operation**

Emission reductions:

CO_2	0-5 %
NO_x	0-5 %
SO_x	0-5 %

Partners:

Lauritzen Bulkers A/S
Lloyd's Register
NanoNord