



A ship-owner taking the decisions to become GREEN

Almost all shipowners in the world are currently faced with two major targets: to reduce the impact on the environment and to reduce costs. Reducing fuel consumption will help shipowners to reach both goals. However, there are many decisions to be taken in order to reach the best possible solution or combination of solutions. The appropriate measures and decisions that will lead to success are dependent on ship type, speed, trade etc.

Laurin Maritime AB is a Swedish shipowner and operator of modern tankers trading mainly from the US Gulf to the eastern seaboard of North and South America and transatlantic to Europe. Laurin's core fleet consists of 10 modern 46,000 dwt IMO II chemical class tankers that can switch between clean petroleum products and large parcels of chemicals to provide maximum flexibility of operation.

Laurin have taken the initiative to devise and implement an energy management scheme, which is a valuable tool for ensuring the correct process. This is being done in order to introduce a systematic approach with a plan-do-check-act cycle rather than making ad-hoc decisions. Nevertheless, it is necessary to decide which systems to implement and to evaluate. This is where the difficult process starts!

At SSPA, we have a passion for sustainable maritime development. In our desire to make our clients' businesses prosper, we offer them knowledge-based solutions.

Development work should begin by reviewing the business concept, in order to fully understand and build in-depth knowledge of the overall context. The information gained from this review will be essential at the stage when potential areas of improvement are identified, prioritised and developed. Success can be attained in many different ways.

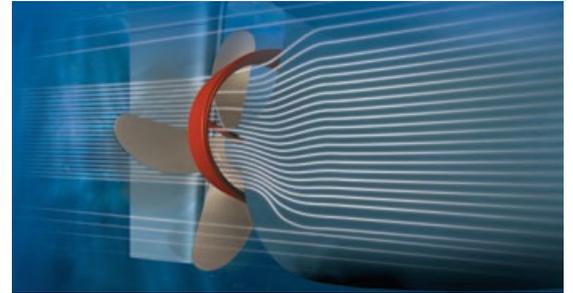
A good example is the shipowner who made the decision to go green by reducing fuel consumption and thereby the impact on the environment. He found major advantages by implementing a systematic approach to energy management with the help of SSPA consultants.

For other maritime stakeholders, the success stories lie in the detail. For example, developing propeller design to increase efficiency and performance using advanced knowledge of micro-scale hydrodynamics. Putting the right focus on details can lead to great achievements.

Another example is a client who is active in the Arctic area, and where trustworthiness was reinforced when a proactive management strategy was implemented. The strategy focused on preparing for and preventing low probability events in order to eliminate or reduce environmental risks.

Are you looking for new sustainable maritime opportunities? Contact us! We have the skills, the experience and the passion to support you throughout the process.

Susanne Abrahamsson



A Mewis Duct® consists of a number of stator fins and a duct, placed in front of the propeller. The stator blades create a pre-swirl and the duct increases the flow velocity towards the propeller. Together they improve the propellers performance.

PHOTO: COURTESY OF BECKER MARINE SYSTEM

Seeking the right advice, taking the right decisions

Being an independent consulting company, SSPA has been contracted by Laurin to evaluate the different possibilities

Laurin's Medium Range tanker "Tintomara", sister ship to "Tambourin".

PHOTO: COURTESY OF LAURIN MARITIME AB





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Installation of a Mewis Duct® on MR tanker "Tambourine" in November 2009.

PHOTO: COURTESY OF LAURIN MARITIME AB

and options for their fleet. The work ranges from general advice to evaluation by theoretical investigations and model tests of different concepts suitable for Laurin's fleet. Furthermore, SSPA will assist in the implementation of the chosen concepts and the evaluation of performance on board. Some of the concepts and ideas that have been investigated so far are trim optimisation for running the ship in on optimum trim condition, different energy saving devices and different rudder concepts.

Mewis Duct

A major step towards a green ship was taken when Laurin decided to evaluate a Mewis Duct® (MD) on their Medium Range (MR) tanker. The MD belongs to the group of energy saving devices that is placed forward of the propeller with the purpose of improving the flow to the propeller. The advantage of the MD is that it combines two positive devices: a pre-swirl stator and a duct. The stator blades are non-movable wings that create a pre-swirl, i.e. they change the angle of the flow towards the propeller in such a manner that it operates with a more favourable angle of attack. The effect of the duct is to increase the flow velocity towards the propeller, which is again an improvement in the propeller's working condition. The properly designed duct itself creates a forward directed force due to its wing section shape.

The MD was presented for the first time at the SMM International Trade Fair in September 2008. It was developed by Friedrich Mewis and is manufactured and retailed by Becker Marine System. It has already been implemented on a number of ships world-wide. As an independent consultant with lengthy experience of test-

ing energy saving devices, SSPA was asked to evaluate the benefit of the MD on Laurin's MR tanker.

After a thorough design phase using Computational Fluid Dynamic computations, Becker Marine System was able to deliver an MD especially adjusted for the actual hull form and propeller. A model scale MD was then manufactured by SSPA according to Becker's specifications. The stator blades were made rotatable so that their pitch angles could be optimised further in model tests.

Mr. Mewis himself took part in the four days of optimisation and evaluation in the towing tank at SSPA. By systematically varying the stator blade angles and carrying out short self-propulsion tests, a final optimised MD could be derived. The gain of the device was then evaluated according to SSPA's standard by resistance and self-propulsion tests with and without the MD. The result revealed to Laurin that this would be a good investment: 6 percent reduction of delivered power. According to SSPA's experience of similar devices this is a very good result.

Evaluation

The MD has now been installed on Laurin's Tambourine and will, together with other measures, now undergo a full scale trial period in order to complete the plan-do-check-act cycle and provide important feedback into the loop of strategic decisions. As part of this process, SSPA will provide support through evaluation and independent advice.

Lars T. Gustafsson
Sofia Werner



"We make many strategic decisions that will impact the company for many years to come. It is important to get these decisions right and working with an independent consulting company like SSPA Sweden AB has been a major advantage when evaluating different concepts and getting unbiased advice."

MIKAEL LAURIN
CEO Laurin Maritime AB