

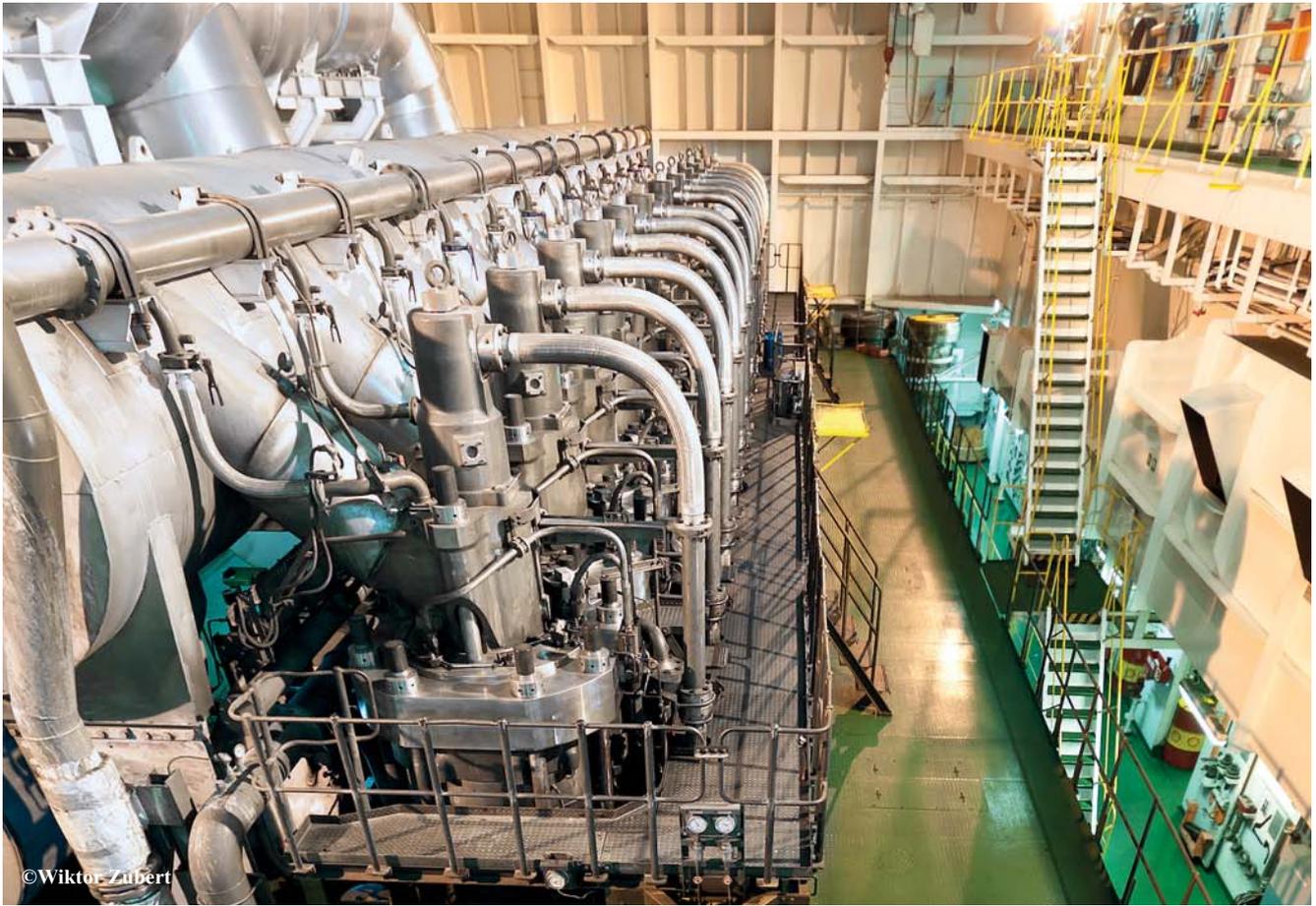
SUBSEA

PROTECTION AND PERFORMANCE

Magazine



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The only hull performance system that gives your engine a break

Ecospeed provides your vessel with long-term protection and dramatically improves the ship's performance.

An impermeable and extremely tough coating is combined with an underwater cleaning system. This keeps the hull roughness at an optimum level and results

in a major saving in fuel.

Ecospeed gives a very thorough and lasting defense against cavitation and corrosion damage for a ship hull's entire service life. The coating comes with a ten year guarantee. No repaint will be needed during future drydockings.

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Editorial



The last couple of months have been very exciting for Subsea Industries. In May our new website went live and last month we welcomed Ecofix to our coating family. We will have more news to share with you in the coming months, so stay tuned.

In the first article in this magazine we write about some of the recent applications of Ecoshield on the running gear of a wide range of vessels.

In this magazine we also give you an overview of our worldwide network of agents. This network allow us to reach a much bigger public directly than would otherwise be possible. Working closely together with our offices, they help us build a strong relationship with our customers.

We end the magazine with a summary of the many benefits our Ecospeed coating system can offer shipowners. Feel free to contact us if you want more information on Ecospeed or one of our other products.



Subsea Industries NV
Boud Van Rompay
Founder

Ecoshield offers real protection for rudders



Application of second layer.

The rudders of a large number of vessels were coated with Ecoshield over the last couple of months. The applications were carried out in China, Trinidad, Romania, Portugal and the United States on different types of ships. Among the vessels treated were several container vessels, car carriers, a bulker, a dredger and a oceanographic research vessel.

The vessels treated belonged to nine different owners. Some of them were new customers, some returning ones. They had experienced first-hand the devastating effect of cavitation on rudders coated with a traditional coating system. For this reason they decided to use Ecoshield to ensure lasting protection against corrosion and erosion damage for the rudders of their vessels for the remainder of their service life.

Suited for newbuilds and existing vessels

Protection of the running gear of your ships is best begun at the new-build phase. When a ship comes into drydock, maintenance of its stern area, especially cavitation and corrosion damage repair, can take a long time. There are strict procedures concerning blasting, painting, welding and propeller and stern tube seal work. Painting is then assigned to the end of the schedule. As a consequence it may be rushed or not done at all or else prolong the stay in drydock.

With an Ecoshield application one can avoid these problems from day one because the underwater gear will not need to be repainted during future drydockings. Ecoshield will remain intact for the lifetime of the vessel. It is guaranteed for ten years. At the most, quick and easy touch-ups amounting to less than 1% of the surface area will be required. Planning the maintenance of the vessel's stern area therefore becomes much easier.

The newbuild phase is the perfect time to apply Ecoshield. However, the coating can also be used to protect vessels that have been in service for some time and are already facing cavitation and corrosion damage. Such was the case with the rudders coated over the last months.

Ecoshield's flexibility makes it easy to adapt the application schedule to the rest of the activities at the shipyard or drydock in a way which does not interfere with them. Overcoating time can be as short as three hours, which means that for smaller surfaces such as rudders or bow thrusters the two coats required can usually be applied in one single day.



Cavitation damage on rudder prior to application. Ecoshield will prevent this from reoccurring.



No Ecoshield repaint will be needed during future dockings.

Underwater Cleaning Equipment

In harsh underwater environments it is essential to have sturdy and reliable equipment. The unique design of our underwater cleaning machines provides the efficiency and durability required in such conditions. All our systems are carefully designed with operational safety as a prime consideration. A range of systems is available for various applications. All our cleaning units are offered separately or supplied with a complete support system including umbilical, tools and hydraulic power unit.



MC 111

The MC111 is our smallest model specially designed for cleaning and polishing ship hulls, propellers and thrusters. The MC111 is very handy and can be easily taken into difficult corners and niches while still obtaining the desired results.



MC 131

The MC131 is a compact unit designed for cleaning all kinds of marine fouling from yachts and smaller ships to offshore oil & gas platforms. The brush rotation speed is adjustable by the diver so as to achieve an optimum hourly cleaning rate.



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Surface preparation is carried out prior to application.



Ecoshield is applied in two identical layers.



Application of first layer.



Overcoat time in between layers can be as short as three hours.



An Ecoshield application is scheduled around the other work required on the vessel.



Ecoshield will protect the rudder against cavitation and corrosion damage.



Rudders of oceanographic research vessel protected with Ecoshield.



Ecoshield is also suited to protect thrusters and thruster tunnels.



Thruster and tunnel of car carrier after Ecoshield application.

Groundbreaking protection for all running gear

Besides offering rudder protection, Ecoshield is also suitable for thrusters, azimuth thrusters, azipods, thruster nozzles, Kort nozzles, thruster tunnels and other underwater ship gear which needs special protection from corrosion. The extra strength coating protects these areas for the service life of the ship. There is no need for recoating or major repair. For this reason the thruster tunnels of several container vessels were also coated together with their rudders, as was the thruster and thruster tunnel of one of the car carriers.

Conclusion

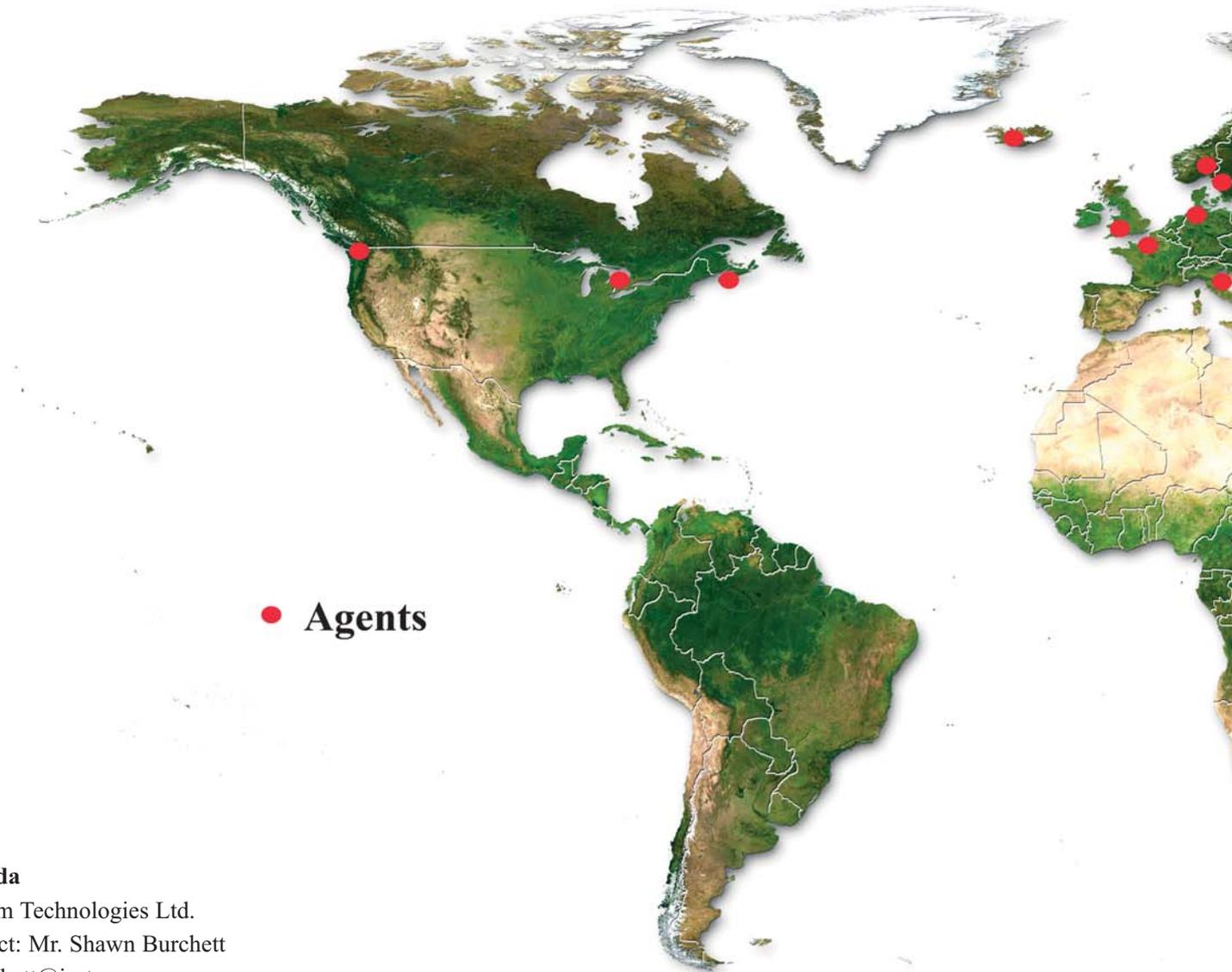
If one takes into account the costs of the temporary underwater repairs and the regular inspections required by a condition of class or the costs for rudder repairs in drydock, it becomes clear that the investment in a coating system that offers extra protection from day one is very easily won back. For this reason more and more owners have Ecoshield applied on the rudders and other running gear of a large part of their fleet or have it included in the rudder specs of their newbuild vessels. These owners invest in the right coating system for protection because they know the savings that will result.

You can give the rudders and running gear of your vessels the same lifelong protection. Contact one of our offices for more information. ■



ECOSHIELD®
THE DIAMOND STANDARD IN STEEL PROTECTION

Worldwide net



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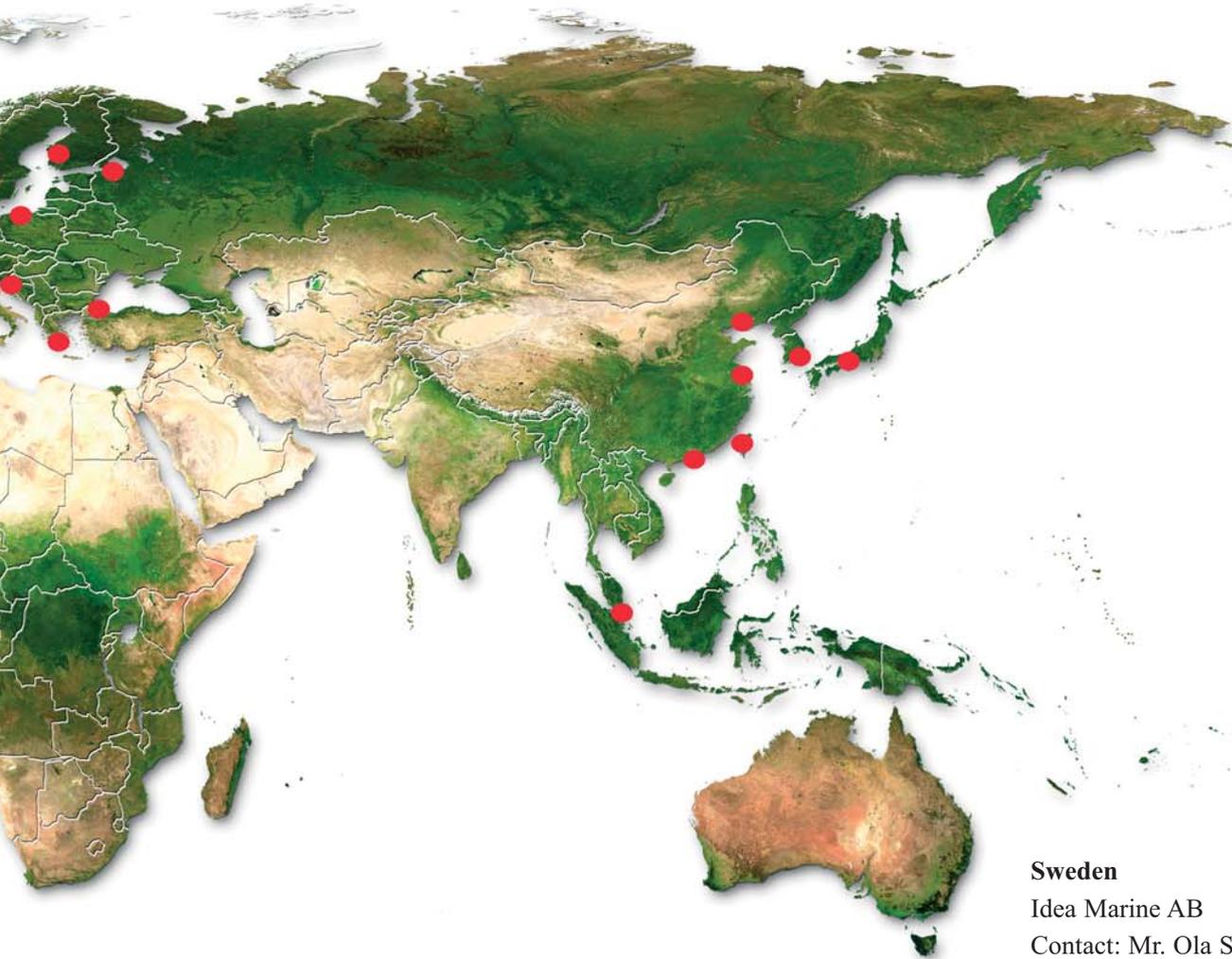
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work of agents



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Why Ecospeed?

What is Ecospeed? Ecospeed is an underwater ship hull protection and fouling control system. It consists of a tough, long-lasting, glassflake reinforced coating combined with routine in-water cleaning.

One application lasts the life of the hull. It does not degrade but becomes smoother over time with regular in-water cleaning. It can be used on any ship or submerged structure, steel, aluminum or GRP. It has the

potential of great financial savings. It is designed with environmental protection in mind and is entirely environmentally safe.

Ultimate hull protection

Complete corrosion protection

- Hard, tough, glassflake-based
- Flexible, very strong adhesion, thick coating
- Impermeable and impenetrable

Long-lasting – one application lasts the life of the ship. No reapplication needed, only minor touch-ups in drydock.

- 10-year extendable warranty

Cleanable in the water

Gets smoother with underwater hull cleaning

Ice class coating (certified)

- Abrasion resistant
- Low friction
- Stays on when other coatings are removed by the ice



Ecocomical benefits

Enormous fuel savings (10 - 25% compared to conventional AF and FR coating systems)

- A smooth hull
- No long term paint degradation
- Becomes hydrodynamically smoother over time with routine cleaning
- AF and FR coatings typically degrade over time, with 20 - 45% fuel penalty after 10 - 15 years
- Easy to keep clean of fouling (can be kept to a light slime at most)

Reapplication costs saved (no reapplication needed)

Drydock savings (fewer and shorter drydockings since no need to repaint)

Ease of application

- Two homogeneous coats, 500µm each, no primer, mid-coat, tie coat or any other coat)
- 3 hour minimum overcoat time, no maximum
- No special environmental requirements
- No special equipment needed

Easy and quick to repair in drydock

Does not interfere with other work in drydock

Greatly reduced total ownership cost

ECOSPEED®
SHIP HULL PERFORMANCE TECHNOLOGY

ECOLOCK® long-lasting protection for offshore hulls



Ecolock is designed to protect offshore vessels for decades without the need for drydocking. Increasingly, offshore units such as FPSOs, FSOs, FLRSUs and others used for offshore oil and gas exploration, drilling, storage and transport need to stay out of drydock for 15, 25 even 40 years.

The challenge has been to protect

the underwater hull from corrosion and to provide a cleanable surface so that the biofouling that accumulates can be removed successfully and safely for UWILD and to reduce weight. Ecolock is the answer to that challenge.

Ecolock is an extremely tough and durable coating designed to remain in excellent condition for 15 - 25

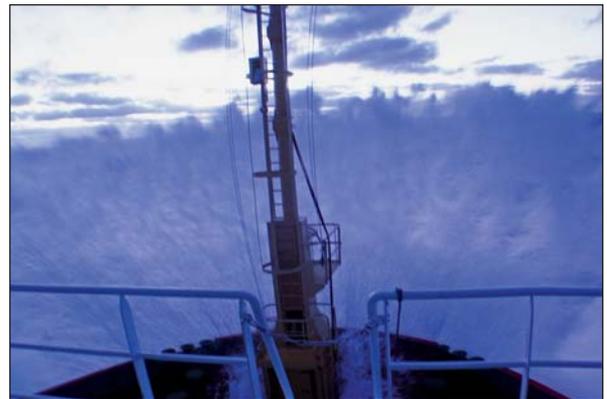
years without drydocking, repair or replacement. Ecolock can be cleaned underwater as often as needed to meet the UWILD and weight requirements of FPSOs, drill ships and other offshore vessels. Ecolock is the result of continual R&D on offshore hull coatings since the 1990s.

ECOLOCK®

LIFETIME CORROSION PROTECTION
FOR OFFSHORE UNITS

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SUBSEA INDUSTRIES



Subsea Industries NV, was founded in 1983 specifically to take care of the design, development and marketing of what has become an evolving line of underwater hull and propeller

cleaning equipment as well as the line of hard hull coating systems.

All products produced by Subsea Industries have the same goal in

mind: To keep the underwater part of your vessel in the best possible condition for its entire lifetime at the best possible performance.

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