

SUBSEA

PROTECTION AND PERFORMANCE



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ECOLOCK® ultra 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

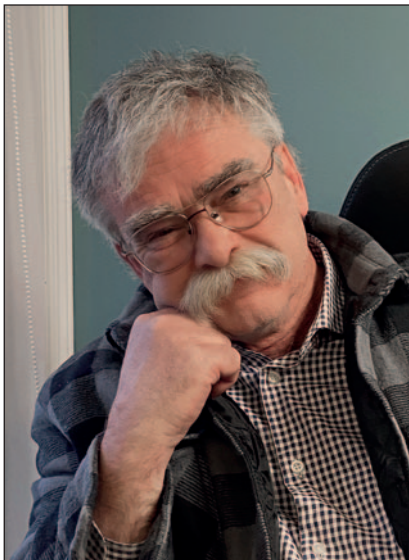
in excellent condition for 15 - 25 years without drydocking, repair or replacement. Ecolock can be cleaned underwater as often as needed to meet the UWILD and weight requirements of FPSOs, drill ships and other offshore vessels. Ecolock is the result of continual R&D on offshore hull coatings since the 1990s.

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Jastram Technologies Ltd. representing Subsea Industries across Canada

Jastram Technologies Ltd. have been actively representing Subsea Industries in Canada since 2014 for the benefit of their and our many Canadian customers. Canada covers a very large area with an extensive shipping industry, requiring representation on both coasts and all across the country. Jastram is able to provide this coverage.



Charles Brown, Jastram Regional Sales Manager for Eastern and Central Canada

Established in 1983, Jastram Technologies Ltd. (JTL) is one of Canada's most recognized suppliers in the marine industry. JTL has offices and warehouses in North Vancouver, British Columbia and Dartmouth, Nova Scotia to provide sales, service and technical support from coast to coast.

We recently interviewed Robert Adie, Regional Sales Manager for Western Canada & Northern Territories, and Charles Brown,



Robert Adie, Jastram Regional Sales Manager for Western Canada & Northern Territories

Regional Sales Manager for the rest of the country, to gain a fuller understanding of JTL and find out their views on the relationship with Subsea Industries.

“We engineer and manufacture steering equipment worldwide and distribute a variety of high-quality, commercial marine products and equipment across Canada,” explains Robert.

Understanding the Canadian marine market has always been critical to Jastram's success. Commitment to excellence makes the selection of the finest manufacturers from around the world of utmost importance. “With the quality products, dedicated support and the professionalism of our principals, JTL has been able to gain the trust and support of the Canadian marine industry,” says Charles.

“Since our relationship with Subsea Industries began in 2014, we have proudly represented Subsea Industries marine coatings, especially Ecospeed, Ecospeed Ice and Eco-shield,” adds Robert.

Jastram's willingness to work with naval architects, ship owners, shipyard engineers and service personnel



Jastram's head office in Vancouver, British Columbia.



Umiak I two years after Ecospeed Ice application, the hull coating still completely intact with no ice damage whatsoever.

at any stage of a vessel's life, from design to construction to in-service challenges, is well suited to distribution of our marine coatings which also are relevant at all stages and for a variety of applications.

Projects

There have been several challenging projects JTL and Subseas Industries have successfully collaborated on. One was protecting the hull of the most powerful ice-breaking cargo

ship in the world, Fednav's bulk carrier Umiak I, operating in the unforgiving and environmentally sensitive Labrador Sea which can have heavy ice up to nine months of the year. A full case study detailing the success of this project can be found on our website: subind.net/case-study/umiak1-2023

Another long-term project is Groupe Océan, who operate a fleet of tug-boats on the St. Lawrence River and Gulf of St. Lawrence. "They believe in the product and insist on Ecospeed Ice coating for ALL of their ice-going vessels," says Charles. A recent case study about Groupe Océan's success with Ecospeed Ice and Subsea Industries coatings in general can be found on our website: subind.net/case-study/group-ocean.

The Canadian Coast Guard chose Ecospeed for their fleet of icebreakers operating on Canada's Atlantic



Canadian Coastguard vessel Leim just coated with Ecospeed Ice.

coast. “Jastram’s goal is to guide them to choose Subsea Industries coatings for all their ice-going vessels, primarily because of the performance of the coating, and the fact that it is ecologically sound enough to use in the pristine waters of Canada’s Arctic Ocean,” says Charles, who is in close contact with the CCG.

In conjunction with JLT, Subsea Industries is currently working with the Royal Canadian Navy on test panels to determine the viability of using Ecoshield on their frigates and patrol vessels.

Jastram is working with several ferry operators, notably Société des Traversiers du Québec, for applications on their fleet of ice-breaking ferries.

Plans – looking ahead

“As for future projects, there has been interest from liquefied natural gas (LNG) operations along Canada’s Pacific Coast to coat their float-



As with all Groupe Océan’s ice-going tugs, the Ocean Tundra is protected with Ecospeed Ice.

ing production storage and offloading (FLNG) facilities with the 100% non-toxic and extremely durable Ecolock marine coating,” says Robert.

“We have also met with Provincial Highways officials looking to coat bridge supports and car decks that see premature erosion from road salt and river ice,” continues Robert. “And we have fielded inquiries from city governments looking to protect public art from road salt that is used extensively every winter in cold northern cities.” Subsea Industries

coatings are the best protection against salt or any other chemical.

“Jastram is very excited and optimistic about this product line,” concludes Charles. “As commercial marine operators look for coatings that not only protect the vessel, but reduce fouling, improve hydrodynamics and fuel efficiency, as well as being non-toxic, Subsea Industries products are among the very few that check ALL boxes.” ■

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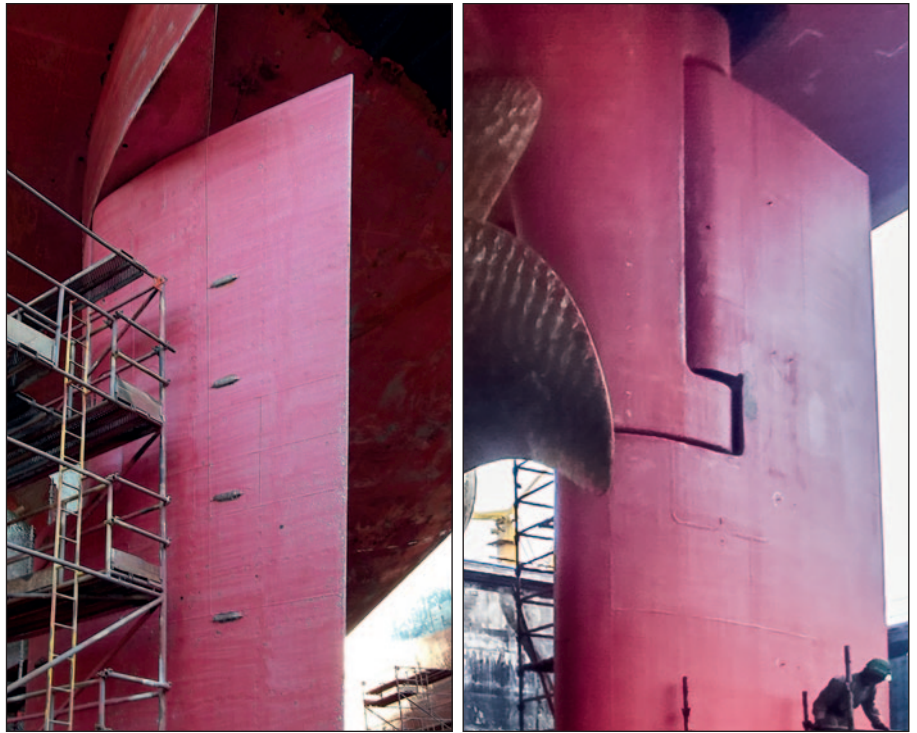


The MV Lomer-Gouin ferry of the Société des traversiers du Québec is protected from the ice by Ecospeed Ice.

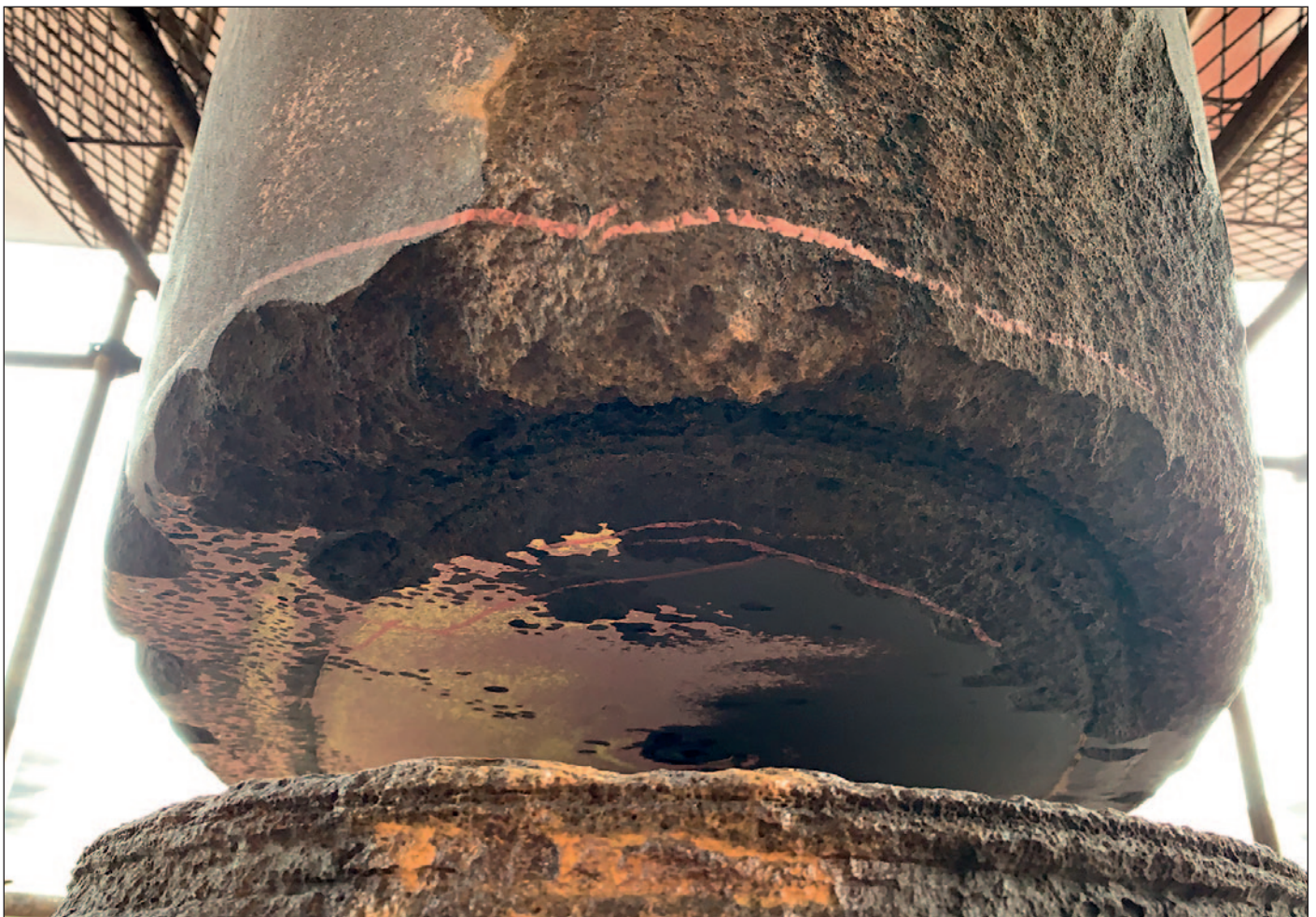
Cavitation solved

As any shipowner knows, a ship's rudder is particularly prone to damage caused by cavitation. The problem features more prominently in high speed container carriers and other fast ships, which are more seriously affected than slower vessels. However, it is a potential problem and hazard for all ships and boats. This problem results in frequent, costly repairs to or replacement of this vital part of the ship's underwater equipment. So far, the bulk of efforts to relieve this problem have not been fully effective.

A ship's rudder, placed directly behind the propeller to give the ship maximum maneuverability, is par-



When drydocking after five years or more, no repaint is needed to rudders coated with Ecoshield.



Damage like this (and much worse) occurs when running gear is not properly protected.



All types of running gear can benefit immensely from an Ecoshield application.

ticularly prone to erosion followed by corrosion. The erosion in this case is caused by hydrodynamic cavitation. The forces involved are very large. It is as if the surface affected has been subjected to repeated, heavy blows from a hammer, as well as high temperatures. This causes what is known as cavitation erosion as the surface material, first paint and then steel, begins to flake away.

One need only examine a ship's rudder that has been subjected to cavitation to see that very severe damage is caused by this phenomenon. Rudders become deeply pitted; paint coatings and hard steel simply disappear; whole plates can fall off and the rudder practically disintegrates altogether, all as a result of this cavitation damage.

Rudder design has mitigated the problem somewhat but far from

solved it. Most coatings generally fail to provide adequate protection and usually erode. The use of cathodic protection systems has no effect on cavitation erosion.

The ideal approach to cavitation erosion would be a protection of the rudder which prevented any such damage from occurring. This solution does exist and is called Ecoshield.

Ecoshield is designed for use on rudders, bulbous bows, stabilizer fins, kort nozzles and other underwater

gear which requires special protection. The coating has proven 100% effective in protecting all running gear from cavitation.

Aside from some minor touch-ups, none of the rudders that were properly prepared and coated have had to be recoated, even after more than ten years. None of them have suffered from cavitation damage since the coating was applied. For those shipowners and operators who have tried this coating for their rudders, the cavitation damage problem ceased to exist.

Once applied and cured the coating forms an extremely tough and durable surface which will continue to protect the rudder for the full service life of the ship without the need for replacement.

Since the original application, over 500 rudders have been coated on a wide variety of ships: cruise ships, cargo vessels, container carriers, ro-ro cargo ships, a cable layer, a dredger, crude oil tankers, research vessels, ice-going ships and ice-breakers, tugboats, a reefer, passenger ferries, bulkers and others.

Shipowners and operators can consider the problem of cavitation damage to rudders to be solved. The solution simply remains to be implemented on all ships afloat to make this vexing problem a thing of the past. ■

**Contact us for more information
on solving the corrosion and/or cavitation
problems on your vessels.**

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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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