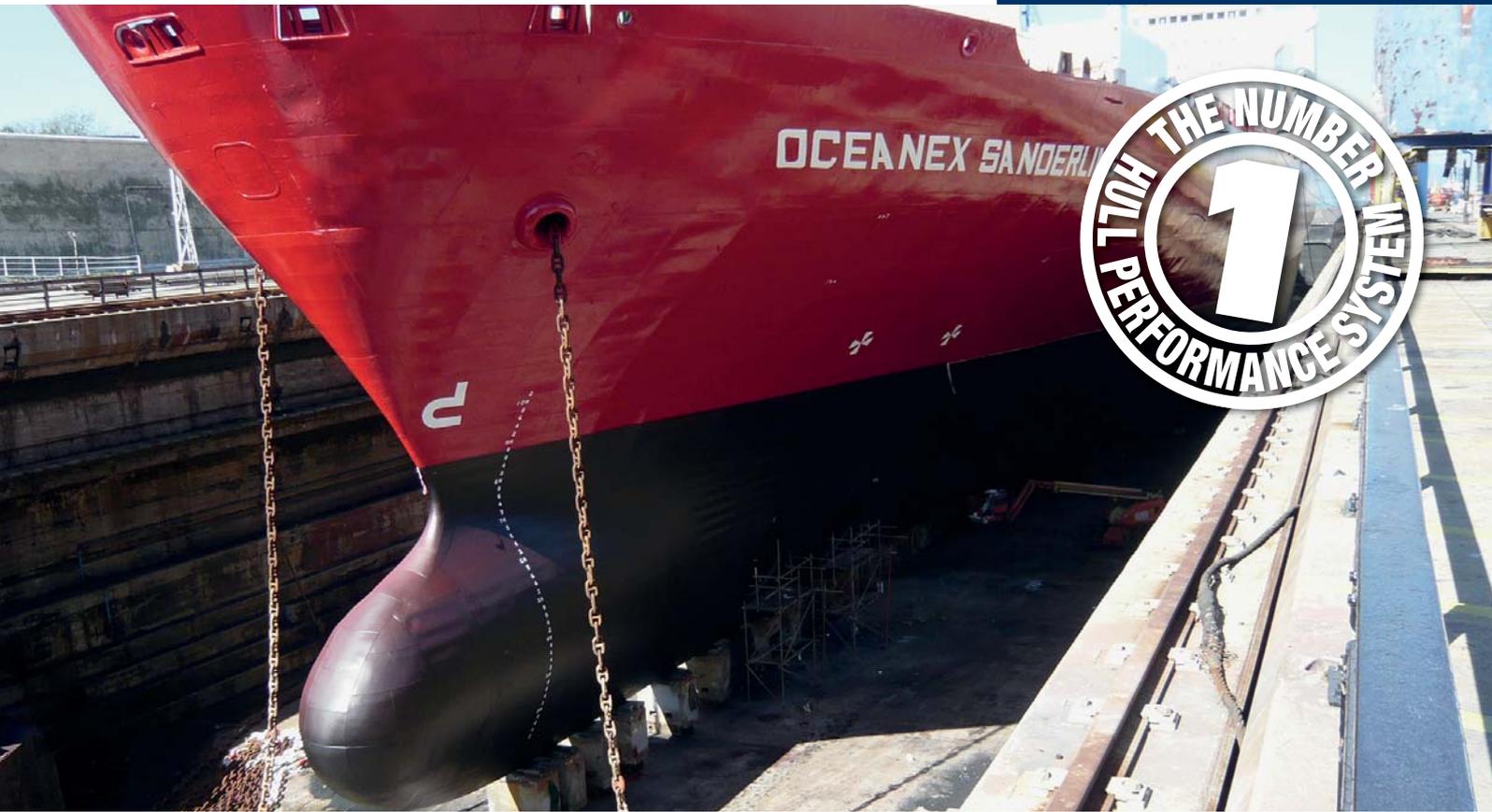


SUBSEA

PROTECTION AND PERFORMANCE

NEWS

LETTER



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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.



**SUBSEA
INDUSTRIES**

Subsea Industries NV
Phone: + 32 3 213 5318
Fax: + 32 3 213 5321
info@subind.net
www.subind.net

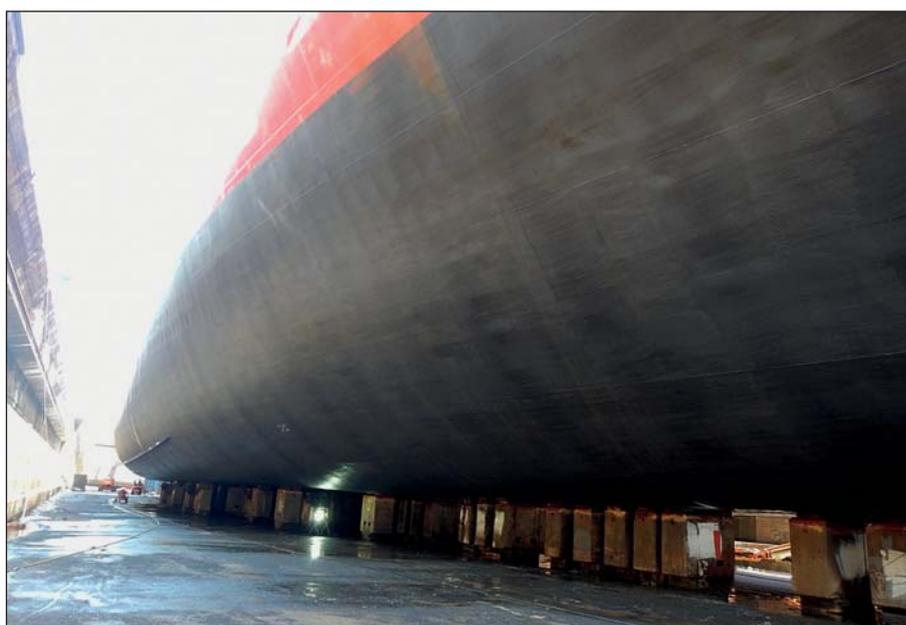
Ecospeed in pristine condition after sailing in ice for five years

When the 194-meter ro-ro vessel *Oceanex Sanderling* drydocked in Gibraltar in April, the coating on her underwater hull was still in excellent condition. The ship has been sailing between Halifax and St. John's in Canada with Ecospeed on her hull since 2011, often in icy conditions.

Despite this, only a few touch-ups were needed on the areas that were coated with Ecospeed in 2011.

Ecospeed is guaranteed for 10 years and has a life expectancy of 25 years and will therefore protect vessels against cavitation and corrosion damage for the remainder of their service life without the need for a full repainting during future drydockings. This is a very important benefit for the owner of this vessel who needed to have his vessels repainted every year with his previous coating. Bad weather and expensive drydock costs in Canada made drydocking in the Mediterranean area the most feasible option for this yearly task. This cumbersome undertaking will no longer be necessary with the one time Ecospeed application that was carried out.

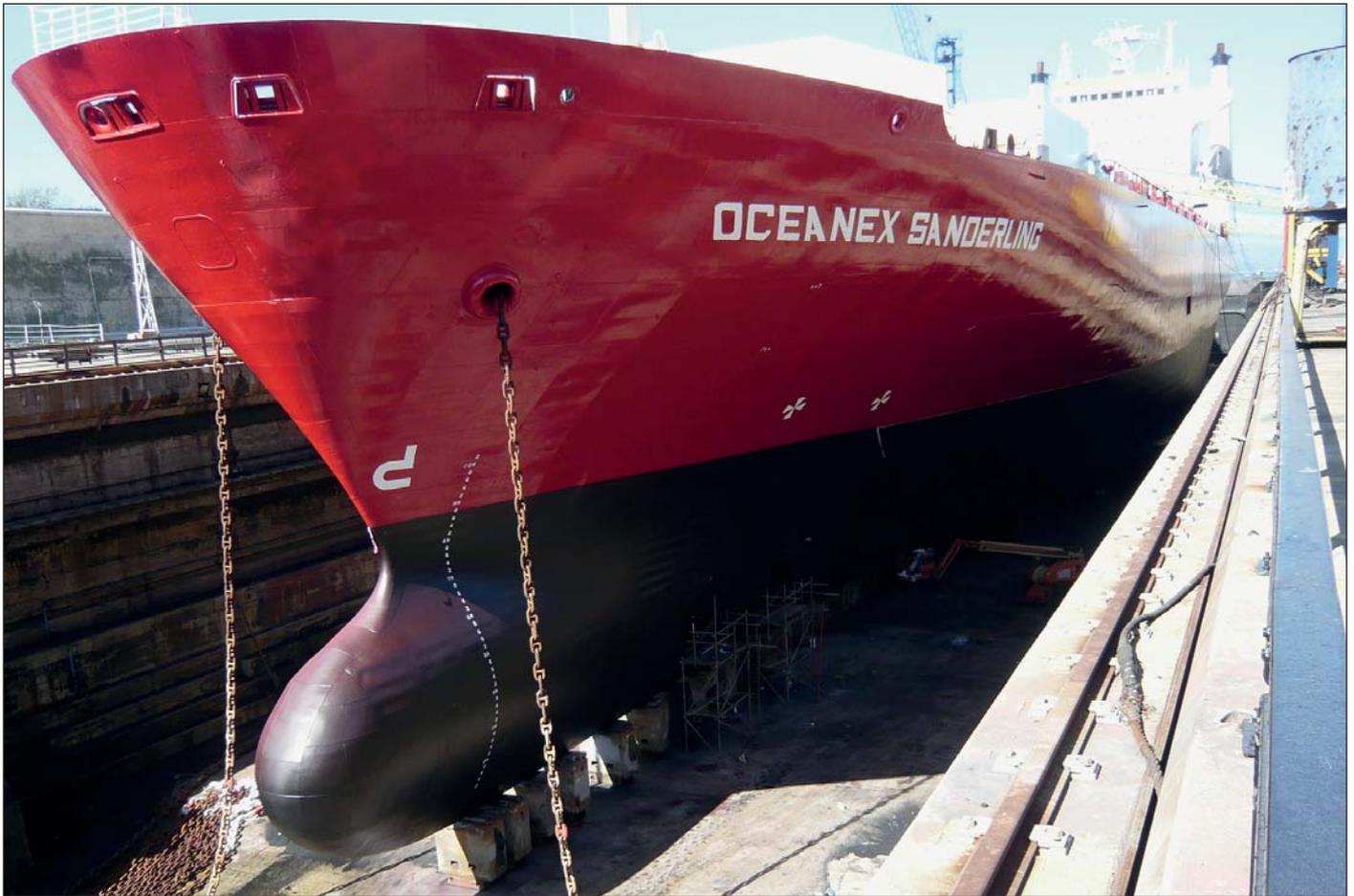
Another advantage of Ecospeed to both shipowner and shipyard is ease and flexibility of application. The entire system is applied in only two homogeneous coats and the overcoating time can be as short as three or four hours, all the way up to weeks or even months if needed. Therefore Ecospeed can easily be adapted to a shipyard's schedule or to unpredictable weather conditions.



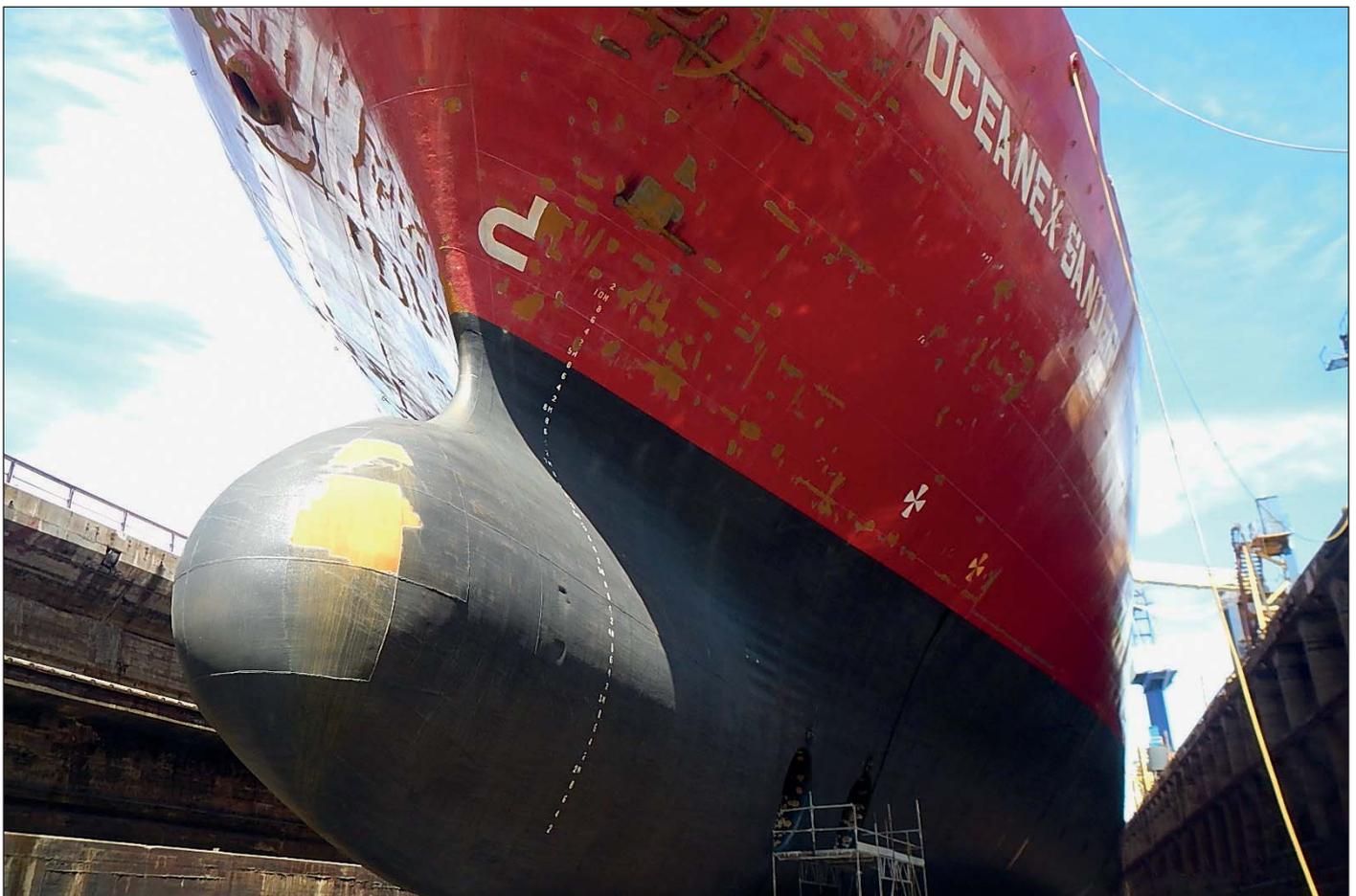
Ecospeed condition after application in 2011 (top) and after sailing in icy waters for five years (bottom).

Further maintenance of the underwater hull is very easy, whether in-water or dry. This is due to the extremely tough surface which can be cleaned of even the heaviest fouling. In-water maintenance procedures can be repeated wherever and whenever needed during the vessel's lifespan without causing damage or deterioration in the quali-

ty of the coating's surface. In fact, each cleaning significantly improves the coating's surface characteristics. The Ecospeed system keeps a ship's underwater hull at optimum performance throughout its service life and helps shipowners save enormous amounts of money by reducing fuel consumption.



Oceanex Sanderling ready to leave drydock in 2011.



Only small touch-ups are needed to those areas of the underwater hull most prone to mechanical damage.



Ecospeed can be cleaned easily in-water or in the dry



Condition of the underwater hull prior to Ecospeed.



Condition of the underwater hull after Ecospeed application.

Ecospeed is 100% non-toxic throughout the entire service life of the vessel and lends itself to environmentally safe maintenance. The above mentioned reduced fuel consumption also leads to a corresponding reduction of the carbon footprint. The combination of these two factors offers significant value to the owner's choice of Ecospeed in terms of a company's corporate responsibility towards cleaner seas and environmentally safe ship hull husbandry.

It is therefore no surprise that in 2011 the owner of m/v *Oceanex Sanderling* quickly saw the advantages of Ecospeed and decided to take the plunge and switch from the traditional coating he had been using. Five years later his choice has proven to be the right one and he will continue to enjoy the benefits of Ecospeed for many years to come. ■

ECOSPEED®
SHIP HULL PERFORMANCE TECHNOLOGY

Ecofix: Corrosion damage repair

Subsea Industries has just announced a new product for filling and building up a corroded and pitted steel surface to its original form prior to recoating with Ecoshield. Ecofix® is as tough as the steel itself, machinable, and can be used to repair most pitting or corrosion damage on rudders, stabilizer fins, thrusters and other underwater gear.

Ecofix is used in combination with Ecoshield, the ultimate rudder protection coating. When a rudder or other piece of underwater ship gear has not been properly protected, the surface will become corroded. Cavitation damage can cause severe pitting. The steel needs to be restored to its original shape with a smooth surface prior to recoating. This is where Ecofix comes in. It is a superior, tested and proven filler. Because it uses the same basic resin



Test plate to show the benefit of an Ecofix and Ecoshield combination.

as Ecoshield, the coating can be applied just one hour after the filler. The bonding and hardness are extraordinary. This is the effective alternative to metal facing or very expensive alternative fillers. And because it is part of the Ecospeed/Ecoshield family, it is fully compatible with the coating.

Ecoshield gives permanent protection against cavitation damage for rudders. The glassflake reinforced coating protects the rudder for the service life of the ship without need for recoating or major repair and comes with a ten-year guarantee. It is the only coating known to fully protect a rudder from all cavitation damage for the remainder of a vessel's service life. Now with the launch of Ecofix, the repair work needed on the underlying steel can be done effectively and economically prior to the Ecoshield application.

Ecoshield and Ecofix are also suitable for stabilizer fins, thrusters, nozzles and other underwater ship gear which needs special protection from corrosion. Now these items can also be repaired prior to recoating where other, less effective coatings have permitted corrosion and cavitation damage to occur.

With the launch of the new product, Subsea Industries offers a full package; Ecofix restores the surface of the rudder or other underwater gear



Corroded areas like this can be filled with Ecofix.

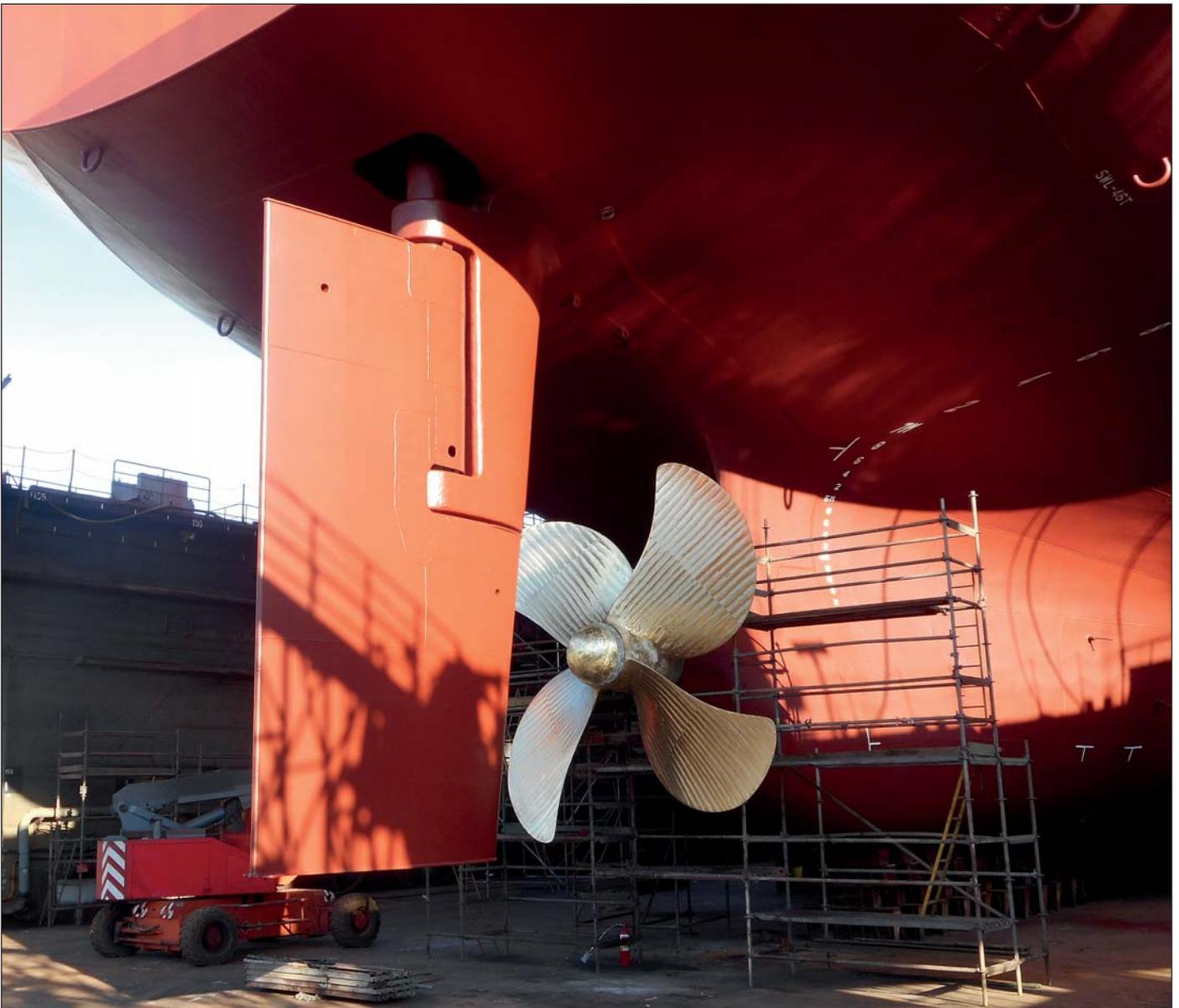


Ecofix application on rudder of LPG tanker.

and Ecoshield will protect the area from ever suffering corrosion and cavitation damage again.

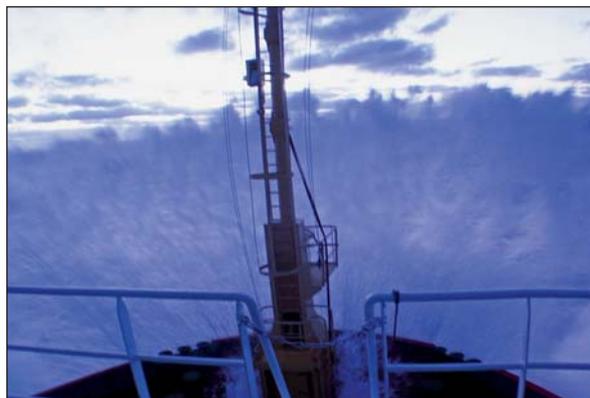
Contact one of our offices today and put a permanent end to worries about cavitation and corrosion damage to rudders and underwater gear. ■

ECOFIX[®]
CORROSION REPAIR



The combination of Ecofix and Ecoshield will keep the rudder in pristine condition from now on.

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.

www.subind.net

Subsea Industries NV

Phone: + 32 3 213 5318

Fax: + 32 3 213 5321

info@subind.net