



February 14, 2025 Mitsui O.S.K. Lines, Ltd. (MOL) MOL Drybulk Ltd. Furukawa Electric Co., Ltd. TSUNEISHI SHIPBUILDING Co., Ltd.

# Successful Field Trial of the "InfraLaser" Rust and

# **Coating Removal System on an Actual Vessel**

-Aiming for Environmental Load Reduction, Improved Working Conditions, and Automation in Ship Repair-

FURUKAWA

ELECTRIC

- Furukawa Electric is continuing to develop a system for rust and coating removal, leveraging the technology cultivated in industrial laser.
- MOL, MOL Drybulk and TSUNEISHI SHIPBUILDING provided the demonstration field, and in December 2024, the four companies conducted a demonstration experiment on an actual ship.
- Through the development of this system, we aim to reduce the environmental impact and improve working conditions in ship repairs. In the future, we also aim to achieve labor-saving and automation of the processes.

Mitsui O.S.K. Lines, Ltd. (Head office: Tokyo, Japan; President: Takeshi Hashimoto, hereinafter referred to as "MOL"), MOL Drybulk Ltd. (President: Koichi Hirata, hereinafter referred to as "MOL Drybulk"), Furukawa Electric Co., Ltd. (Head office: Tokyo, Japan; President: Hideya Moridaira, hereinafter referred to as "Furukawa Electric") and TSUNEISHI SHIPBUILDING Co., Ltd. (Head office: Hiroshima, Japan.; President: OKUMURA Sachio, hereinafter referred to as "TSUNEISHI SHIPBUILDING") conducted a successful field trial of the "InfraLaser" system on the outer hull of an actual vessel in December 2024.

Furukawa Electric, with the cooperation of MOL and MOL Drybulk, has been developing a rust and coating removal system for onboard maintenance since 2021, utilizing the surface treatment solution "InfraLaser" based on technology cultivated in industrial lasers. Additionally, since 2022, Furukawa Electric and TSUNEISHI SHIPBUILDING have been conducting demonstration experiments aimed at the development of the same system for ship repairs.

### Background

During ship repairs, rust and coatings are removed for hull inspection and repainting. However, the current sandblasting method, which removes rust and coatings by blasting abrasive materials against the surface, scatters waste materials and removed paint as debris, necessitating recovery efforts. By replacing this with a laser blasting method that generates minimal waste, dust, and noise, we expect to reduce environmental impact and improve occupational health.

MOL and MOL Drybulk have expressed their support for this development and have participated in the activities. Additionally, MOL Group and TSUNEISHI SHIPBUILDING, recognizing the potential of utilizing "InfraLaser" for ship repairs and committed to reducing environmental impact and enhancing occupational health for sustainable business operations, initiated discussions on collaborative creation and development of a laser blasting system for ship maintenance and repairs.

## Details

By applying the metal processing (welding, cutting, surface treatment, etc.) technology that Furukawa Electric has cultivated over many years in industrial laser to the optimization of irradiation conditions for rust and paint removal in the undercoating of ships, we aim to develop a system that minimizes the impact on the object and reduces the environmental burden. In the field trial, TSUNEISHI SHIPBUILDING provided feedback for use in shipbuilding and ship repair, and MOL and MOL Drybulk provided development support and feedback as ship operators and managers. These will be reflected in the development of the "InfraLaser" system and optimized into a shape and specifications suitable for use in real environment.

As the first effort by the four companies, the field trial was conducted in December 2024 on a ship operated by MOL (the outer hull's paint: manufactured by Kansai Paint Marine), confirming the effectiveness of the laser application of the system under development to the outer hull. Moving forward, we will accelerate the development of an innovative laser application system for ship repair that can replace the conventional sandblasting method for rust and paint removal and coating of ships. We will also continue to study the automation of the system by taking advantage of the laser's zero reaction force (Note), aiming to labor saving and automate the ship maintenance and repair process.



Field Trial Scenes on an Actual Vessel 1



Field Trial Scenes on an Actual Vessel 2



Laser Processing on Ship's Outer Plate (Enlarged)



TSUNEISHI SHIPBUILDING's Repair Factory

(Note) Lasers differ from conventional methods in that they do not generate reaction force, resulting in no recoil during irradiation.

#### **MOL Group's Sustainability Management**

The MOL Group's sustainability management is based on a long-term strategy to achieve sustainable growth for society and the Group. The Group's vision is "We will develop a variety of social infrastructure businesses in addition to traditional shipping businesses, and will meet the evolving social needs including environmental conservation, with innovative technology and services.

MOL group aims to be a strong and resilient corporate group that provides new value to all stakeholders and grows globally." To achieve this goal, MOL is working on the Group management plan "<u>BLUE ACTION 2035</u>" and the "<u>Environmental Vision 2.2</u>" for the environment. We are committed to maximizing the value we provide to all stakeholders by implementing BLUE ACTION 2035 in accordance with <u>our corporate mission and values</u>, "<u>MOL CHARTS</u>," while addressing the materiality of "Sustainability Issues."

https://www.mol.co.jp/en/sustainability/management/

#### Furukawa Electric Group's approach to the SDGs

Considering the United Nations' Sustainable Development Goals (SDGs), the Furukawa Electric Group has established the Furukawa Electric Group Vision 2030, with the year 2030 as its target. This initiative aims to "establish a social infrastructure that integrates information, energy, and mobility to safeguard the global environment and facilitate safe, secure, and comfortable living." We are currently working towards this objective. To achieve our Vision 2030, we will contribute to the achievement of the SDGs by promoting Open, Agile, and Innovative ESG management that aims to enhance our corporate value over the medium to long term.

The Furukawa Electric Group's approach to the SDGs: <u>https://furukawaelectric.disclosure.site/ja/themes/182</u>

### **TSUNEISHI SHIPBUILDING's approach to the SDGs**

TSUNEISHI SHIPBUILDING is implementing ESG and SDG Initiatives under the themes of "Trust Building with the Community", "Pursuit of Happiness in the Workplace" and "Contribution in Technology and Development" with "Ingenuity for Global Environmental Conservation" at the forefront, given the nature of our business closely related to the sea. We will realize a sustainable society through environmentally friendly ships and services.

TSUNEISHI SHIPBUILDING's approach to the SDGs: TSUNEISHI SHIPBUILDING SUSTAINABILITY

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