

“G-Series” Bulk Carrier[†]

1. Introduction

With global warming becoming an increasingly serious problem, a framework for CO₂ reduction was discussed in the international shipping industry, and in July 2011, the International Maritime Organization (IMO) adopted regulations on CO₂ emissions from ships. These regulations are applied to ships contracted after January 2013. Strict treaties were adopted under these regulations, calling for a 10% reduction from the present average CO₂ emission after January 2015 and a 30% reduction in 2025.

On the other hand, high fuel costs in the shipping industry, driven by the continuing high price of crude oil, have also heightened the need for energy saving ships.

2. Next-Generation Ship: “G-Series” Bulk Carrier

In April 2010, Japan Marine United Corp. (then Universal Shipbuilding Corp.) set a target of “reducing greenhouse gases (GHG) by 25% within 2 years and 50% in 10 years” and created a Green Ship Planning Dept. as the organization responsible for promoting this goal. Centering on that department, a total of more than 50 persons, including members not only of the Design Division, but also the Technical Research Center and others, has been participated in the Green Ship Development Project.

With the cooperation of outside research organizations and manufacturers, Japan Marine United Corp. carried out development of a “Green Ship,” with improvement of hull performance and higher efficiency engine plant as the priority items, and completed the development of the “G-Series” No. 1 ship, a 209 000 DWT (dead weight ton) bulk carrier, in August 2011. After the development, marketing and sales activities of new vessels were immediately initiated. Japan Marine United Corp. has received orders for multiple vessels in this series from the end of 2011 until the present, and successfully delivered the No. 1 ship in August 2013 (Photo 1).

The features of the 209 000 DWT bulk carrier which



Photo 1 “G Series” 209BC during sea trial

was the original “G-Series” development ship are as follows:

- (1) Achieves a 25% reduction in GHG by improvement of hull performance, construction of a low fuel consumption engine plant, etc.
 - Reduced hull resistance
 - Improved propulsion efficiency
 - Improved performance in actual sea service
 - Selection of optimum main engine
 - Reduction of shipboard electric power consumption
 - Exhaust heat recovery and aid to propulsion system
- (2) Equipped with optimum route search/monitoring system “Sea-Navi*” as standard equipment.
- (3) In comparison with other ships completed by Japan Marine United Corp., achieved approximately a 3% increase in maximum cargo, together with a reduction of 10 tons/day or more in fuel consumption, improving fuel consumption performance by about 20%, etc., and thereby realized the industry’s top level of economical service.
- (4) “Sea-Navi*” voyage support system also enables preparation of Ship Energy Efficiency Management Plan (SEEMP), which was required from January 2013.

3. Conclusion

The next-generation “G-Series” ship developed by Japan Marine United Corp. realized a 25% reduction in

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*“Sea-Navi” is registered trademark in Japan.

GHG. With this as one milestone, JMU is demonstrating the synergistic effect of the merger of the former IHI Marine United Inc. and the former Universal Shipbuilding Corp., and will continue research and development toward the achievement of the further target of a 50% reduction in GHG.

For Further Information, Please Contact:

Ship & Offshore Sales Dept. I, Ship & Offshore Div.,
Japan Marine United Corp.

Phone: (81)3-6722-6170 Fax: (81)3-6722-6175

Website: <http://www.jmuc.co.jp/en/>