

JMU delivers newly developed 12,800TEU containership MAERSK EL ALTO



Japan Marine United Corporation (JMU) delivered the MAERSK EL ALTO, a 12,800TEU containership, at the Kure Shipyard on September 26, 2024. This is the third vessel in the series of five large 12,800TEU-type containerships, which utilizes JMU technology to achieve high levels of environmental and loading performance and is designed to operate in a wide range of sea areas.

JMU has adopted methanol-ready specifications and obtained the DNV Fuel Ready (LFL[AEc;D:MEc]) Notation as a step toward next-generation fuel. The optimal hull form that achieves high efficiency under frequently operated speeds and drafts, and the JMU patent energy saving devices such as SURF-BULB[®], ALV-Fin[®] and Rupas[®] rudder result in extremely high fuel efficiency despite the large hull size. The EEDI of this vessel is reduced by more than 50% compared with the reference, achieving reductions in phase 3 despite the requirement to only comply with phase 2.

Due to the increase in demand for reefer container transport in recent years, this vessel can load up to 2,500 TEUs

of reefer containers.

Brittle crack arrest technology for extremely thick, high-strength steel plates has been applied, which improves the safety of the hull structure without sacrificing loading efficiency. The vessel has also obtained DNV SMART (EEN) Notation, which is granted to vessels applying advanced digital technology.

This vessel has various environmental friendly features such as compliance with NO_x Tier III regulations and provision of AMSP (Alternative Maritime Shore Power) which allows the diesel generator to be stopped during cargo handling.

Principal particulars

L (o.a.) x B (mld.) x D (mld.) x d (mld.):	335.00m x 51.00m x 27.10m x 16.00m
DWT/GT:	152,237t/127,832
Main engine:	MAN 7G95ME-C10.5 diesel x 1 unit
Speed, service:	22.0kt
Complement:	30
Classification:	DNV



For further information please contact:

Website: <http://www.jsea.or.jp>

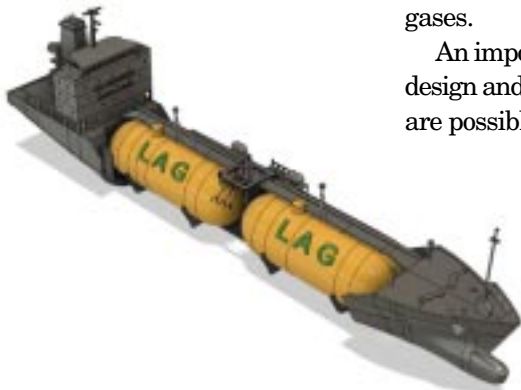
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Shin Kurushima Sanoyas obtains ClassNK's AiP for fully refrigerated type C tank of ammonia carrier

Shin Kurushima Sanoyas Shipbuilding Co., Ltd. has acquired AiP (Approval in Principle) from ClassNK (Nippon Kaiji Kyokukai) for the conceptual design of a fully refrigerated type C tank exclusively used for ammonia cargo together with the cargo handling system. The new tank system will be intended for coastal-service ammonia carriers.

This fully refrigerated type C tank has been selected from the IMO's IGC code tank types, and is assumed not to leak cargo gas for transporting ammonia safely. Ammonia is toxic but does not generate CO₂, so is expected to contribute to decarbonization. (IGC code provided by the IMO is the International Code for the Construction



An image of coastal-service ammonia carrier

and Equipment of Ships Carrying Liquefied Gases in Bulk.)

This fully refrigerated type C tank has two features: ammonia can be liquefied in the tank with a refrigerator at an atmospheric pressure level in a world first, and the very large cargo tank is only for ammonia.

Previously, semi refrigerated type C tanks were used, in which cargo gases were liquefied by both pressurization and refrigeration. Such cargo tanks have been used for transporting propane, butane, and ammonia gases in combination.

This newly developed C tank can be adequately designed only for ammonia-liquefaction conditions because there is no need to consider other cargo gases.

An important feature is that stable design and manufacture of the C tank are possible due to the minimum design

pressure required by the Type C tank code. This will be attained by employing the fully refrigerated type that can use only



Masaki Matsunaga, Executive Vice President of ClassNK (left) and Yoji Morimoto, President of Shin Kurushima Sanoyas (right) at AiP presentation ceremony

refrigeration under atmospheric pressure in the cargo tank.

Accordingly, the fully refrigerated type C tank can use thinner tank material compared with the conventional large type C tank, thus decreasing the cargo tank weight. This will also suppress gas leakage for safety assurance.

Demand for ammonia gas will increase as an indispensable energy source for the attainment of carbon neutrality by 2050. So, this newly-developed fully refrigerated type C tank system will be useful in coastal transport to electric power plants or other users in industrial areas.

MHI-MME completes a total of 250 propeller retrofits

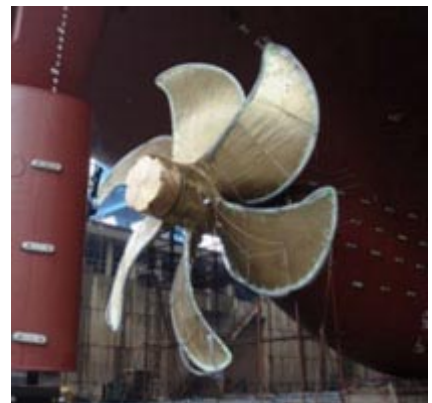
Mitsubishi Heavy Industries Marine Machinery & Equipment Co., Ltd. (MHI-MME) has achieved 250 units in orders received for retrofit propellers, which MHI-MME commenced deliveries in 2013. This achievement took only two and a half years after the company recorded 100 units in orders received in December 2021. Behind this, there is the enhancement in environmental awareness in the market.

Since a consensus was reached on the target of "achieving zero net GHG emissions by 2050" at the 80th session of IMO's Marine Environment Protection Committee (MEPC80) held in July 2023, companies' awareness of GHG reductions has grown even

stronger than before. This is reflected in the increasing number of retrofit inquiries MHI-MME has received since MEPC80. The propeller retrofit solution involves optimizing the design to match the main engine load limit during slow steaming to realize reduced fuel consumption. It contributes directly to GHG reductions.

This solution has been mainly adopted on container ships which apply large main engine power limitation. Today, it has been expanded on all kinds of ships, including car carriers.

MHI-MME is endeavoring to offer trade-ins of propellers after replacement, provide support for propeller replacement work and maintain a



stable supply structure even with the rising cost of materials. The company will continue to propose propellers for retrofitting in order to meet the needs of the market, such as lower fuel consumption and reduced GHG emissions.

Accumulated production of MITSUI-MAN B&W engines reaches 120 million horsepower

MITSUI E&S Co., Ltd. has achieved accumulated engine production of 120 million horsepower in ship engines with the manufacture of the 7,525th engine, a MITSUI-MAN B&W 7G95ME-C10.6-EGRTC. This is the main engine for a 13,700-TEU container carrier to be built at Imabari Shipbuilding Co., Ltd. for Ocean Network Express Pte. Ltd.

The production record of MITSUI-

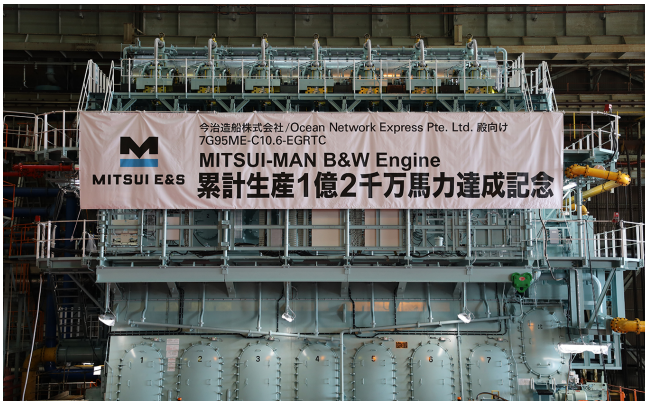
MAN B&W engines reached 100 million horsepower in June 2018, followed by another 20 million horsepower in the next 6 years and 5 months. In the total of 96 years since the first engine was manufactured in 1928, accumulated production of 120 million horsepower has been achieved. MITSUI E&S group expects its annual production of engines to be about 3.04 million horsepower in FY2024.

Since entering into the license agreement with Burmeister & Wain of Denmark in 1926, now MAN Energy Solutions, MITSUI E&S has been building its experience as the world's leading marine propulsion sys-

Accumulated Production Records

HP	Year of achievement
1st engine	June 1928
10 million	October 1976
20 million	September 1987
30 million	December 1996
40 million	July 2002
50 million	October 2005
60 million	March 2008
70 million	June 2010
80 million	November 2012
90 million	September 2015
100 million	June 2018
110 million	March 2021
120 million	November 2024

tem supplier. MITSUI E&S will continue to develop products that meet market needs, including the development of dual-fuel engines for GHG reduction, and contribute to the construction of environmentally friendly ships at shipyards in Japan as before.



120 mil. hp. memorial machine MITSUI-MAN B&W 7G95ME-C10.6-EGRTC

MITSUI E&S and PACECO receive order for eight Near Zero Emission Hybrid Transtainer cranes —Delivery to the Port of Long Beach, California—

MITSUI E&S Co., Ltd. (MITSUI E&S) and its subsidiary company in the United States, PACECO Corp. headquartered in California, U.S. (PACECO) have received an order from the American port operating company, International Transportation Service, LLC. (ITS) for eight MITSUI-PACECO Near Zero Emission Hybrid Transtainer cranes (rubber tyred gantry crane) for the Port of Long Beach, California, in anticipation of future conversion to zero-emission cranes.

This is the first U.S. order following the U.S. government's announcement in February 2024, focusing on enhancing port cybersecurity and managing cyber risk for Chinese-made cranes deployed at critical commercial ports via the U.S. Coast Guard (USCG).

Since 1985, MITSUI E&S and PACECO have delivered approximately 20 MITSUI-PACECO Portainer cranes (ship to shore gantry cranes) and 40 MITSUI-PACECO Transtainers to ITS. These new cranes are the same type as the five cranes delivered in 2023. The companies are making every effort to support the Clean Air Action Plan which aims at zero emissions of all cargo handling equipment at the Port of Los Angeles and Port of Long Beach by 2030.

As pioneers in crane manufac-

turing industry, MITSUI E&S and PACECO will continue to contribute to the safety of port infrastructure in the U.S. by providing high-quality and environmentally-friendly cranes, supporting customer operations and aiming for further business expansion in the U.S.



MITSUI-PACECO Transtainers delivered in 2023

KEN CITRUS

Builder: Imabari Shipbuilding Co., Ltd.
 Ship type: Bulk carrier
 L(o.a.) x B x D: 182.93m x 31.00m x 15.00m
 DWT/GT: 25,253t/40,087
 Main engine: 6UEC42LSH-Eco-D3 diesel x 1 unit
 Speed, service: 14.0kt
 Classification: ClassNK
 Completion: January 17, 2025

**INTERASIA TRANSFORM**

Owner: Interasia Lines Singapore Pte. Ltd.
 Builder: Japan Marine United Corporation
 Hull No.: 5518
 Ship type: 3,055TEU containership
 L (o.a.) x B x D x d: 203.5m x 34.8m x 16.6m x 11.5m
 DWT/GT: 37,1600t/30,676
 Main engine: MAN B&W 7S70ME-C10.5 diesel x 1 unit
 Speed, service: 21.50kt
 Complement: 25
 Classification: DNV
 Registry: Singapore
 Completion: October 3, 2024

**FRANBO BRAVO**

Builder: The Hakodate Dock Co., Ltd.
 Hull No.: 918
 Ship type: 40,000DWT-type bulk carrier
 L (o.a.) x B (mld.) x D (mld.) x d (mld.): 182.94m x 31.6m x 14.80m x 10.37m
 DWT/GT: 40,099t/24,496
 Main engine: J-ENG 6UEC42LSH-Eco-D3-EGR diesel x 1 unit
 Speed, service: Approx. 13.6kt
 Classification: ClassNK
 Registry: Marshall Islands
 Completion: September 27, 2024

**FEDERAL NEW YORK**

Owner: Federal Trident Ltd.
 Builder: Oshima Shipbuilding Co., Ltd.
 Hull No: 11057
 Ship type: Bulk carrier
 L (b.p) x B x D: 196.48m x 23.762m x 14.85m
 DWT/GT: 34,763t/21,043
 Main Engine: MITSUI-MAN B&W 5S50ME-C9.7-HPSCR diesel x 1 unit
 Speed, service: 14.15kt
 Classification: DNV
 Registry: Marshall Islands
 Completion: October 22, 2024

**C.S. COSMOS**

Owner: Caribstar Shipping, S.A.
 Builder: Onomichi Dockyard Co., Ltd.
 Hull No.: 823
 Ship type: Bulk carrier
 L (b.p.) x B x D: 174.00m x 32.00m x 14.80m
 DWT/GT: Approx. 40,000t/Approx. 25,200
 Main engine: J-ENG 6UEC42LSH-Eco-D4-EGR diesel x 1 unit
 Speed, service: Approx. 13.7kt
 Classification: ClassNK
 Registry: Panama
 Completion: November 19, 2024

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