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For further information please contact:
Website: http://www.jsea.or.jp
JAPAN SHIP EXPORTERS' ASSOCIATION
15-12, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 Tel: (03) 6206-1661 Fax: (03) 3597-7800 E-Mail: postmaster@jsea.or.jp

JMU completes 1st 3,055TEU-type container ship, WAN HAI 321

Japan Marine United Corporation (JMU) delivered the WAN HAI 321, a 3,055TEU container ship, to Wan Hai Lines (Singapore) Pte. Ltd. at its Kure Shipyard on September 18, 2020.

This is the first vessel of the new class of 3,055TEU-capacity container ship constructed by JMU. The vessel can load containers in 12 rows across and six tiers high in the cargo hold, and 14 rows across and 7 tiers high on the deck, with the total of 3,055-TEUs.

The vessel is optimally designed for medium to long distance trade as the amount of seaborne trade to and from Asia and within Asia is increasing, and achieves significantly improved environmental and operational performance compared with conventional vessels, with both high loading capacity and high navigation performance using JMU's latest technology.

- The vessel achieves high propulsion efficiency through its advanced lower resistance hull form and JMU energy saving devices such as the ALVFin® (Advanced Low Viscous Resistance Fin) and LV-fin (Low Viscous resistance Fin).
- MAN-B&W's latest electronically controlled main engine, Mark 10.5 and inverter controlled cooling sea water pump reduce the fuel oil consumption.
- The Energy Efficiency Design Index (EEDI), Phase 3, will be enforced on ships ordered on and after January 2022. This vessel has already achieved this standard.
- Safety and convenience for steering during voyage and reaching/leaving the pier are improved by adopting the INS (Integrated Navigation System) and full enclosed navigation bridge.
- Voyage assistance and monitoring of the engine room by CCTV camera system improves safety.
- This is the first vessel in Japan to obtain the DNVGL SmartShip Notation which is granted to vessels fitted with smart technology such as monitoring systems.

Principal particulars

L (o.a.) x B (mld) x D (mld) x d (mld):	203.50m x 34.80m x 16.60m x 11.50m
DWT/GT:	37,160t/30,676
Main engine:	MAN-B&W 7S70ME-C10.5 x 1 unit
Speed:	21.6kt
Complement:	25
Classification:	DNVGL

Naming ceremony held for KAGUYA, Japan's 1st LNG bunkering vessel

Kawasaki Heavy Industries, Ltd. has held a naming ceremony for the LNG (liquefied natural gas) bunkering vessel, KAGUYA (HN: 1744), at the Sakaide Works. The vessel is being built for Central LNG Shipping Japan Corporation (a corporate joint venture owned by Nippon Yusen Kaisha, Kawasaki Kisen Kaisha, Ltd., JERA Co., Inc. and Toyota Tsusho Corporation).

Vessels fueled by LNG instead of heavy fuel oil have been progressively introduced throughout the world as an effective measure in response to exhaust-gas emission regulations for vessels, which have been tightened since 2020. The KAGUYA will be Japan's first LNG bunkering vessel outfitted with facilities for supplying LNG-fueled ships with LNG at sea.

Hitoshi Nagasawa, President, Representative Director of Nippon Yusen Kaisha, and Yukikazu Myochin, Representative Director, President and CEO of Kawasaki Kisen Kaisha, Ltd., named the vessel KAGUYA at the ceremony. Following this, Sunao Nakamura, Managing Executive Officer of JERA Co., Inc., and Toshiro Hidaka, CEO for Machinery, Energy & Project Division of Toyota Tsusho Corporation performed the rope-cutting ceremony.

The vessel will be delivered after various tests using actual LNG. Once construction is complete, the vessel will be based at JERA Kawagoe Thermal Power Station and used to supply LNG fuel to LNG-fueled ships in the Chubu region (Central Japan).

Kawasaki says that it will continue to actively work on the construction of various types of liquefied gas vessels including LNG, as demand is expected to increase as a clean form of energy.

Principal particulars

LNG loading capacity:	3,500m³
Gross tonnage:	4,044
Length, o.a.:	81.70m
Breadth, mld.:	18.00m
Depth, mld.:	7.80m
Planned molded draft:	4.80m

MES-S completes 36th neo60BC, FEDERAL OAK

Mitsui E&S Shipbuilding Co., Ltd. (MES-S) completed and delivered the 60,000DWT-type bulk carrier, FEDERAL OAK (HN: 1965), at its Tamano Shipyard on June 11, 2020. The design provides over 60,000 deadweight tons with the Panamax beam and retains the neo56 compatibility for ports and trade routes.

The vessel has four cranes and five cargo holds, and is designed for loading various cargoes such as coal, ore, and grain, as well as lengthy/heavy cargoes such as steel pipes and hot coils, but retains the superior usability of the Mitsui 56 series. The size of the hatch opening is the largest for this type of vessel in terms of both length and width. The new form of the bow and stern can maintain good performance under rough sea conditions as well as calm sea conditions and shows better maneuverability.

The main engine, a Mitsui MAN B&W 6S50ME-B9.3 diesel engine, complies with the MARPOL NO_x restriction (Tier-II) for exhaust gas emissions, and has superior fuel oil consumption over a wide range of outputs.

The ship has low sulfur fuel oil tanks, which are designed for operation in Emission Control Areas (ECAs) with strengthened restrictions for SO_x. Compliance with the SOLAS Noise Code contributes to better crew working and living environments.

Principal particulars

L x B x D:	199.99m x 32.25m x 18.50m
DWT/GT:	60,385t/34,582
Main Engine:	MITSUI-MAN B&W 6S50ME-B9.3 diesel x 1 unit
Speed, service:	about 14.5kt
Complement:	24
Classification:	NK
Registry:	Liberia
Delivery:	June 11, 2020

SSK completes 1st NO_x Tier III compliant 82,000DWT bulker, SMIRNI

Sasebo Heavy Industries Co., Ltd. (SSK) delivered the 81,834 DWT bulk carrier, SMIRNI, to the management of Vrontados S.A. on August 27, 2020. The vessel is the first of the series of 82,000DWT-class bulk carrier coplying with the Harmonized Common Structural Rule (CSR-BC&OT) and is also the first joint development with Namura Shipbuilding Co., Ltd.

Various measures for energy and fuel saving efficiency are adopted to the optimized hull form such as newly developed vertical shaped bow and two energy saving devices, the Namura flow Control Fin (NCF) and the Rudder Fin attached to the stern, which improve propulsion performance and fuel saving efficiency.

To simplify the hull inspection, ClassNK notation of "In Water Survey (IWS)" was acquired. The central fresh water cooling system is adopted for prolonging the maintenance period of machinery.

The vessel is equipped with a main engine and generator engine compliant with the Annex VI of MARPOL 73/78 regultions (Tier III) to reduce NO_x emissions. Furthermore, the Ballast Water Treatment System is installed onboard, and a gray water holding tank for stowing domestic wastewater and a slop tank for gathering rainwater and hold washing water.

Low VOC coating with higher abrasion resistance is adopted for cargo holds. ClassNK notation of "Inventory of Hazardous Materials (IHM)" was also acquired. This vessel complies with the requirements of both the Hong Kong Convention and EU-Ship Recycling Regulation.

To achieve the safe maneuverability, the Electronic Chart Display and Information System (ECDIS) is installed, and two ECDIS installations allow the omission of paper nautical charts. Necessary mooring fittings are provided to pass through the Neopanamax Locks.

Principal particulars

L (o.a.) x B (mld) x D (mld) x d(mld) :	228.9m x 32.26m x 20.20m x 14.50m
DWT/GT:	81,834t/44,487
Complement:	25
Classification:	ClassNK
Registry:	Marshall Islands
Completion:	August 27, 2020

Oshima delivers 64,000 DWT type bulk carrier, NORD AMAZON

Oshima Shipbuilding Co., Ltd. delivered the NORD AMAZON, a 64,000DWT-type bulk carrier, to Dampskibsselskabet NORDEN A/S on July 22, 2020. This vessel is the first delivery of the newly developed 64,000DWT-type bulk carrier.

The vessel is optimized for carrying grain, coal, ore, hot coils, cement and sulphur, and is designed to achieve larger cargo hold capacity and deadweight with shallower draft.

This vessel has various Eco-friendly features. Measures to prevent marine pollution include the gray water tank to store domestic wastewater and the bilge gathering tank to store bilge water. Moreover, to prevent environmental pollution caused by harmful substances at scrapping and to ensure the safety and health of involved workers, inventory of hazardous materials describing the types and places of harmful substances is provided. A SO_x scrubber is installed to reducing SO_x emissions, and this vessel also complies with the IMO SO_x regulations.

An electronically controlled main engine and a high efficiency propeller are equipped for higher propulsion efficiency. Furthermore, Oshima developed energy saving devices, "Advanced Flipper Fins," "Rudder Fin," and "Seaworthy Bow" are installed for further improvement of propulsion efficiency. Consequently, this vessel has already achieved over 30% reduction from the IMO reference line of EEDI (Energy Efficiency Design Index), which means less CO_2 emissions per unit deadweight and nautical mile.

Principal particulars

L (o.a.) x B x D x d:199.95m x 32.26m x 19.28m x 13.542m (summer)
DWT/GT: 64,499t/36,256
Hold capacity: 81,238 cubic feet
Main engine: Mitsui-MAN B&W 6S50ME-C9.6 x 1 unit
MCR: 7,220kW at 92.0rpm
Speed, service: about 13.8kt
Classification: NK
Completion: July 22, 2020

Shin Kurushima Dockyard acquires AiP from ClassNK for 49,000DWT class chemical tanker

Shin Kurushima Dockyard Co., Ltd. (SKDY) has acquired Approval in Principle (AiP) from Nippon Kaiji Kyokai (ClassNK) for the design of a LNG fueled type 49,000DWT chemical tanker.

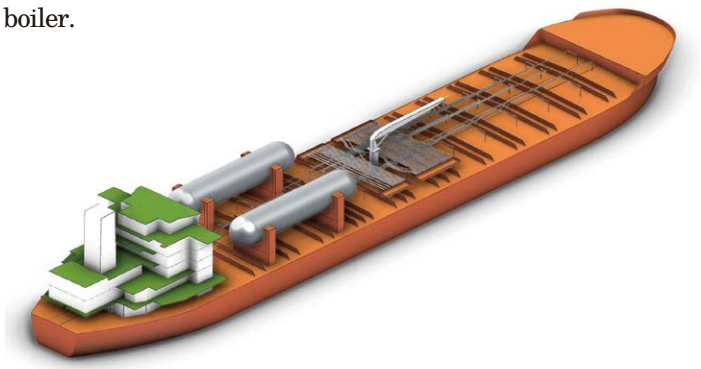
SKDY has studied the basic design to satisfy the requirements of the current IGF Code (MSC.391(95)) and IGF Code Revision (MSC.458(101)) that will be implemented in 2024. Furthermore, the company completed examination of the basic design drawing according to the "Steel Ship Rules - GF edition" by ClassNK together with Hazard Identification (HAZID) as a risk assessment. Consequently, the basic design of the 49,000DWT chemical tanker was approved.

The basic design features of the chemical tanker include the use of two independent type C LNG fuel tanks, for which the secondary protective tank wall is unnecessary, and can be installed on the upper deck. This arrangement can maintain almost the same cargo tank capacity as an ordinary tanker of the same class. LNG fuel tank capacity is sufficient to navigate for 40 days with LNG fuel only, which allows a long cruising range. A fuel gas preparation room is provided between the engine room under the upper deck and the cargo tank, and the fuel gas piping route is optimized between the LNG fuel tank, gas bunker station, and the engine room to achieve smooth fuel supply for the main engine, main diesel generator, and an auxiliary boiler.

Recent emission restrictions for SO_x and NO_x emissions as well as CO_2 emission control based on the Energy Efficiency Design Index (EEDI) are becoming severer. Therefore, SKDY has been developing LNG fueled ships and recently completed construction of an LNG-fueled PCC as a flagship model.

Principal particulars of LNG-fueled 49,000DWT-type chemical tanker

Ship type: IMO TYPE 2&3 chemical tanker
L x B x D x d: 179.40m x 32.26m x 19.50m x 13.30m (at scantling)
DWT/GT: about 49,000t/33,100
Speed, service: about 14.0kt



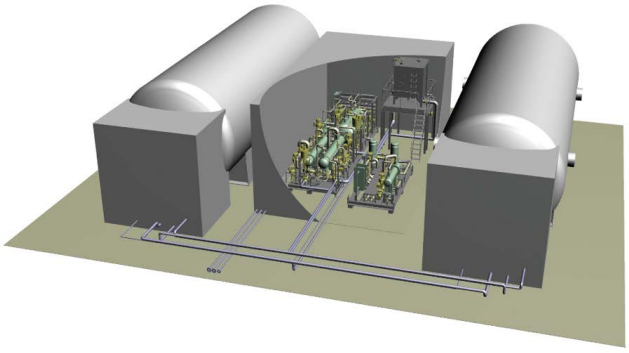
Mitsubishi receives AiP for LNG fuel gas supply system from BV

Mitsubishi Shipbuilding Co., Ltd., a member of the Mitsubishi Heavy Industries (MHI) Group, was granted Approval in Principle (AIP)(Note 1) from the French Classification Society, Bureau Veritas (BV), for a liquefied natural gas (LNG) fuel gas supply system (FGSS) for marine fourstroke dual fuel engines(Note 2) on October 19, 2020. The AIP certificate was presented on the same day at Mitsubishi Shipbuilding's headquarters in Yokohama.

The FGSS consists of an LNG fuel tank, gas supply unit, control systems and other relevant equipment.

The approved FGSS was developed mainly for installation on coastal ferries and small to medium cargo ships, based on the experience and knowledge obtained through shipbuilding of LNG carriers for many years and the technologies and know-how accumulated by development of FGSS products for large ships. The small vacuum-insulated type tanks for the system have a double shell structure that ensures high heat insulation and also allows the external cylinder of the tank to remain at normal temperature, which consequently simplifies the support structure of the tank and reduces the workload for installation work. Furthermore, the Tank Connection Space(Note 3) is also designed to save space and allow easy operation and less maintenance.

Mitsubishi Shipbuilding delivered a FGSS in 2019 to be installed on the first Japanese LNG-fueled car carrier, currently being built at Shin Kurushima Toyohashi Shipbuilding Co., Ltd., and has one more order for a ship currently under construction. The included large tanks with insulation coatings are designed to be the best fit for installation in large vessels.



Mitsubishi Shipbuilding will keep expanding its product lineup to meet the increasing demand for LNG fuel and will continue to provide FGSS as a manufacturer, and to offer superior engineering services for gas handling-related equipment to support the design and construction of LNG-fueled ships regardless of the size and vessel type, for the further development of ocean transport, and reduction of environmental load.

Note 1 *Approval in Principle (AIP) indicates that a certification body has reviewed the basic design, and confirmed that it meets the technical requirements and standards for safety. The inspection of this system was conducted based on the IGF Code(Note 4) with which compliance is required when using LNG fuel, and the BV's ship classification regulations.*

Note 2 *A marine four-stroke dual fuel engine is an engine fitted mainly in small and medium ships, and can use both conventional heavy oil and natural gas as fuel.*

Note 3 *Tank Connection Space is the space surrounding all tank connections and tank valves, and is required under the IGF Code for tanks with such connections in enclosed spaces.*

Note 4 *The International Code of Safety for Ships Using Gases or Other Low-flashpoint Fuels (IGF Code) is an international regulation stipulating the safety requirements for ships using LNG and other fuels with low flashpoints.*

Naikai completes 875GT passenger/car ferry, SHOYO MARU

Naikai Zosen Corporation completed the 875GT passenger/car ferry, SHOYO MARU, at the Setoda Shipyard for Ishizaki Kisen Co., Ltd. of Japan on July 15, 2020. The ferry is now in coastal transport service on the Matsuyama-Kure-Hiroshima route in the Seto Inland Sea.

The propulsion system uses two engines and two propellers, and an eco-cap is attached to each propeller to increase the propulsion performance. A car roll-on/off ramp door is provided at the bow and stern.

The stern form is the ordinary type to improve the propulsion efficiency and seaworthiness. The bow thruster installed at the bow section allows easy berthing and unberthing. An elevator is provided for aged and disabled passengers to connect the vehicle and promenade decks at the port side.

Principal particulars

L (o.a.) x B x D x d:62.60m x 13.00m x 3.90m/9.10m (vehicle deck/promenade deck) x 2.80m (designed load draft)

DWT/GT: 420t/871

Main engine: Daihatsu-6DEM-23 diesel engines x 2 units

MCR: 1,200kW x 750/235min^{-1}/unit

Speed, service: about 14.8kt

Complement: 12

Classification: Japanese Government (smooth water area)

Registry: Matsuyama City, Ehime Pref., Japan

Completion: July 15, 2020

NORD MINAMI

Builder: Minaminippon Shipbuilding Co., Ltd./Imabari Shipbuilding Co., Ltd.
Ship type: Chemical/product oil carrier
L (o.a.) x B x D: 184.94m x 32.20m x 19.10m
DWT/GT: 52,825t/30,560
Main engine: 6S50ME-C9.6 diesel x 1 unit
Speed, service: 14.5kt
Classification: ClassNK
Completion: October 28, 2020

WAN HAI 322

Owner: Wan Hai Lines (Singapore) Pte. Ltd.
Builder: Japan Marine United Corporation
Ship type: Container carrier
L (o.a.) x B x D x d: 203.50m x 34.80m x 16.60m x 11.50m
DWT/GT: 37,160t/30,676
Main engine: MAN-B&W 7S70ME-C10.5 diesel x 1 unit
Speed: 21.6kt
Complement: 25
Classification: DNVGL

SEATRIBUTE

Owner: Kali Marine Ltd.
Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.
Hull No.: 1402
Ship type: Crude oil carrier
L x B x D: 228.96m x 44.00m x 21.80m
DWT/GT: abt. 111,700t/abt. 60,600
Main engine: Hitachi MAN B&W 6G60ME-C9.5 diesel x 1 unit
Speed: 15.0kt
Classification: LR
Registry: Malta
Completion: August 6, 2020

GLORIOUS SUNSHINE

Owner: Solar Shipping and Trading S.A.
Builder: Onomichi Dockyard Co., Ltd.
Hull No.: 768
Ship type: Product/chemical tanker
L (o.a.) x B x D x d: 175.00m x 32.20m x 19.05m x 13.10m
DWT/GT: 49,996t/29,462
Main engine: Mitsui MAN B&W 6S50ME-B9.5 diesel x 1 unit
Speed, service: 15.3kt
Classification: ABS
Registry: Monrovia, Liberia
Completion: September 1, 2020

SINAR MAUMERE

Owner: PT. Samudera Energi Tangguh
Builder: Sasaki Shipbuilding Co., Ltd.
Hull No.: 709
Ship type: Chemical tanker
L (o.a.) x B x D x d: 95.32m x 14.60m x 7.20m x 5.745m
DWT/GT: 3,986t/2,943
Main engine: Akasaka AX33BFD diesel x 1 unit
Output: 1,618kW x 310rpm
Speed, service: 12.0kt
Classification: BV
Registry: Panama
Completion: July 20, 2020

Cover Photo

BRILLIANT DEPARTURE

The CSC CREATOR underway in front of a Japanese symbol, Mount FUJI, during her sea trials. This Capesize bulk carrier was built by the Tsu Shipyard of Japan Marine United Corporation.