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Sanoyas Shipbuilding Corp. delivers FERRY I to domestic owner

Sanoyas Shipbuilding Corporation delivered FERRY I to Nankai Ferry Co., Ltd. on December 3, 2019. The FerryI is a 2,800GT passenger/car ferry which can accommodate 427 passengers normally or 546 passengers in thehigh season, and load 37 trucks.

The FERRY I was built as the replacement for the FERRY TSURUGI, which engaged in the regular service between Wakayama Port and Tokushima Port, and entered service in December 15, 2019. The vessel is named Ferry I based on the three key words of "I: myself," "Ai: love in Japanese," and "Ai-zome: indigo dyeing that is a famous product of Tokushima in Japanese."

The propulsion system uses two engines and two propellers, the biaxial stern catamaran hull shape provides energy saving performance, and the combined control of the controllable pitch propellers, flap rudders, and bow thruster allows safe passage, and easy berthing and unberthing.

The vessel has an upper navigation deck, A-deck, passenger deck, and lower car deck. A lift equipped on the starboard side enables passengers to easily access the passenger deck from the car deck. LED lighting is adopted in the passenger accommodation, crew accommodation, car deck, engine room, and elsewhere to reduce energy consumption.

For passenger comfort, many facilities are equipped such as first class seats (green seats), seating mat areas, a nursing room, driver area with shower, seats with lighting and AC100V outlets for business persons, and an observation deck providing great views of the Kii Channel. The anti-rolling tank installed in the funnels stabilizes the rolling of the vessel and provides a comfortable trip. In addition, various activities to entertain customers such as heart marks, the symbol mark of the vessel, are scattered about the vessel for a quest activity, and a replica steering wheel provides an "Instagrammable" photo spot on the deck.

Car roll-on/roll-off ramp doors are provided at the bow and stern. The car deck has 4.3m height for loading high cube container trailers. The Ferry I is expected to promote domestic marine traffic by carrying many passengers and vehicles.

Principal particulars

Owner:	Nankai Ferry Co., Ltd.
Hull No.:	1369
L (o.a.) x B x D x d:	108.01m x 17.50m x 6.10m x 4.40m
GT (JG):	2,825
Loading capacity:	427 passengers and 37 trucks
Speed, service:	about 18.4kt
Registry:	Japan (Port of Wakayama, Wakayama pref.)
Delivery:	December 3, 2019

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NAMURA builds LNG-fueled large coal carrier

Namura Shipbuilding Co., Ltd. has entered into a letter of intent with Mitsui O.S.K. Lines, Ltd. (MOL) for the construction of a newly developed 95,000DWT type large coal carrier which is the world's first driven by LNG fuel. The vessel will be operated by MOL in the import of coal to the coal-fired power plants of Kyushu Electric Power Co., Inc.

The use of LNG as fuel is expected to virtually eliminate SO_x emissions and reduce NO_x emissions, as well as reduce CO_2 emissions, in comparison with conventional marine fuels.

The vessel will be designed with the following features. LNG can be used to power the main engine, main diesel generator and auxiliary boiler. Further improvement of propulsion performance and fuel saving can be achieved with the adoption of Namura energy saving devices. EEDI Phase 3 is satisfied by the primary fuel change to LNG.

The LNG fuel tank has been arranged above the aft mooring deck to maintain operability of cargo loading/unloading. The vessel has sufficient cargo hold capacity for coal transport. Two pairs of slop tanks are provided around the midships and cargo part aft for appropriate management and discharge of rain water and water used for cleaning cargo holds.

Principal particulars

L (o.a.) x B (mld.):	abt.235m x 38m
DWT:	abt. 95,000t
Expected delivery:	June, 2023

Sumitomo obtains LR AiP certificate to build LNG dual-fuel tanker

Sumitomo Heavy Industries Marine & Engineering Co., Ltd. has obtained the Approval in Principal (AiP) certificate for LNG dual-fuel Aframax tanker from Lloyd's Register.

The LNG dual-fuel system will consist of IMO Type-C LNG tanks and a fuel gas supply system (FGSS), and those will be installed on the Sumitomo Aframax tanker which has already gained significant market popularity. This system will allow the storage and use of LNG as fuel without sacrificing the cargo tank capacity.

Use of LNG fuel greatly reduces the SO_x, NO_x, and CO_2 emissions contained in exhaust gas from a diesel engine. Therefore, the dual-fuel system can cope with the strengthening requirements of recent international regulations for the exhaust gases from ships. The LNG installations for this system have been designed to satisfy the requirements of the IGF Code and the ship classification regulations, and to ensure onboard safety.

LR's AiP certificate awarded to Sumitomo at LR Yokohama Technical Support Office

In use of the LNG fuel, the Sumitomo Aframax which has already been well known for its high environmental performance will satisfy the requirements of EEDI Phase 3 in 2025 by much margin.

LR's certificate

Based on this system, Sumitomo has also developed the LNG dual-fuel ready design, which takes account of installation of the LNG dual-fuel system after delivery of the ship, and Sumitomo has already received a number of orders.

Oshima develops 95,000DWT type LNG-fueled bulk carrier

Oshima Shipbuilding Co., Ltd. will build an LNG-fueled postPanamax bulker for NYK Line which has been specifically developed to service the coal terminals of coal-fired power plants of Kyushu Electric Power Co., Inc. The vessel will incorporate a unique LNG tank arrangement developed by Oshima, and the LNG tank is installed aft of the specially designed accommodation.

The use of LNG reduces emissions of 100% of SO_x, 80% of NO_x, and 30% of CO_2 compared to conventional marine fuel oil. With the strengthening of global environmental regulations, Oshima Shipyard will promote the introduction of LNG as an effective means for reducing the carbon content of marine fuel, and contribute to the realization of a low-carbon society.

Oshima shipyard will continue to work on the development of vessel designs providing suitable cargo handling efficiency and low fuel consumption for ship owners and ship operators, and environmental friendly chracteristics for sustainable marine transportation.

Principal particulars

Length (o.a.):	less than 234.99m
Breadth, mld.:	38.00m
DWT:	about 95,000t
Completion:	2023

Kawasaki delivers LNG transport vessel, MARVEL PELICAN

Kawasaki Heavy Industries, Ltd. has delivered the MARVEL PELICAN (HN: 1729), a 155,000m³ capacity LNG transport vessel, for use by Mitsui & Co., Ltd. The MARVEL PELICAN is the second of Kawasaki's line of 155,000m³ LNG carriers to be commissioned, and is designed to enable passage through the newly expanded Panama Canal, which opened for full operations in 2016. Kawasaki will continue to pursue shipbuilding operations in the future with the anticipated rise in demand for LNG and other clean-energy fuels.

The MARVEL PELICAN will be used by Mitsui & Co., Ltd., primarily to transport LNG procured via the American Cameron LNG Project. Kawasaki has retained the hull dimensions to enable docking at major LNG terminals around the world, but has also optimized the hull structure to decrease overall ship weight. This LNG carrier is equipped with four independent Moss LNG tanks for a total cargo capacity of 155,985m³. The thermal insulation system of the LNG tanks adopts the proprietary Kawasaki Panel System, which offers outstanding heat insulation performance for an LNG boil-off rate of no more than approximately 0.08% per day.

The MARVEL PELICAN uses a dual fuel diesel (DFD) electric propulsion system, which enables greater fuel efficiency than the existing steam turbine plant design. The DFD engine can consume both oil and gas, whereas a conventional generator engine can only burn oil for fuel. The propulsion system comprises multiple generator diesel engines and variable-speed propulsion motors. Either gas or oil is supplied to the engines to generate electricity, which drives the propulsion motors that power the propeller. The two-motor, twin-screw propulsion system enables high propulsive performance at a wide range of speeds.

The cargo tank section is protected by a double-hull and double-bottom design, so even if the carrier's hull were to sustain damage the LNG tanks within would remain safe and undamaged. The bridge is designed with state-of-the-art electronic navigation equipment concentrated in one location for greater ease of operation as well as panoramic windows offering a 360-degree view to the outside.

Principal particulars

L (o.a.) x B x D x d:	299.90m x 48.90m x 27.00m x 11.80m
DWT/GT:	74,787t/128,917
Cargo tank capacity:	155,985m³ (at -163°C, 100% capacity)
Main propulsion system:	2 propulsion motors, 2 reduction gears
Speed:	Approx. 19.5kt
Complement:	44
Classification:	ClassNK
Registry:	Panama
Delivery:	December 13, 2019

JMU completes G-Series 208,000DWT bulk carrier

Japan Marine United Corporation has delivered the CSC CREATOR, a G-Series 208,000DWT bulk carrier, at the Tsu Shipyard on January 9, 2020. This is the second G-Series vessel of the Cape size bulk carrier type called G208BC.

G208BC was designed with the CSR-BC&OT (Common Structural Rules for Bulk Carriers and Oil Tankers) to G209BC, which has succeeded in dramatic reduction of fuel oil consumption using various and comprehensive energy-saving measures, so GHG (Greenhouse Gas) emissions are reduced to satisfy Phase 2 of the EEDI (Energy Efficiency Design Index) defined in MARPOL Annex VI.

High propulsion performance was achieved by applying various and comprehensive technologies such as the advanced lower resistance hull form and optimized energy saving devices including the SSD® (Super Stream Duct®), SURF-BULB® (Rudder Fin with Bulb), and ALV-Fin® (Advanced Low Viscous Resistance Fin).

Furthermore, the unique LEADGE-Bow® shape reduces the wave resistance and the well-refined shape of the superstructure has low wind resistance. Installation of a shaft generator also contributes to further fuel consumption reduction by navigation without operating diesel generators during voyages.

Principal particulars

L (o.a.) x B x D x d:	max.299.99m x 50.00m x 25.00m x 18.40m
DWT/GT:	208,815t/106,910
Main engine:	MAN-B&W 7S65ME-C8.2 x 1 unit
Speed, service:	14.7kt
Complement:	25
Classification:	CR/NK

MHIMSB delivers FGSS for Japan's first LNG fueled PCC

Mitsubishi Shipbuilding Co., Ltd., a member of Mitsubishi Heavy Industries, Ltd. (MHI) Group, based in Yokohama, has delivered the first LNG fuel supply system FGSS (Fuel Gas Supply System) for dual fuel marine engines. This system has been installed onboard the first LNG fueled pure car carrier (PCC) built in Japan, which is currently under construction at Shin Kurushima Toyohashi Shipbuilding Co., Ltd.

The FGSS is an LNG fuel gas supply system developed by Mitsubishi Shipbuilding utilizing LNG and vaporized gas handling technology developed through its long experience with the construction of LNG carriers, and has been verified for marine use based on extensive experience with marine engine test facilities at engine manufacturers.

The FGSS consists of LNG fuel tanks, LNG fuel gas supply units, the control unit, and other components, and is delivered in modules. The FGSS is expected to contribute to optimum design of the cargo space and help the shipyard to shorten the installation period, as well as support safe operation by customizing the control system and other parts of the FGSS to meet the operational needs of the ship owner. Mitsubishi Shipbuilding also provided the shipbuilding yard with engineering services and technical support relating to gas handling aboard the ship.

The installation of the FGSS is expected to greatly contribute to the environmental performance of the ship, to meet the SO_x emission regulations coming into effect globally in 2020, and to improve the energy efficiency CO_2 emissions per unit of transportation) of the ship by approximately 40%, which far exceeds the International Maritime Organization (IMO) EEDI Phase 3 requirements that will become effective in 2025. The ship is additionally expected to reduce emissions of SO_x by approximately 99% and NO_x by approximately 86% compared with conventional heavy oil fuel engines. Further, the ship has also been adopted by Japan's Ministry of Environment and Ministry of Land, Infrastructure, Transport and Tourism as a model project to reduce CO_2 emissions by using alternative fuel.

FGSS module and fuel tank (below)

Conversion of conventional oil-fired ships into LNG fuel ships is one of the solutions to conform to the emission regulations. By providing the FGSS and related engineering services and technical support for newbuildings and conversions, Mitsubishi Shipbuilding hopes to contribute to economy for ship owners and operators, increase the added value of the ships, and reduce the environmental load that is increasing on a global scale.

Naikai completes 1,850GT passenger/vehicle ferry

Naikai Zosen Corporation completed construction of the 1,850GT passenger/vehicle carrier, FERRY MISHIMA, at the Setoda Shipyard for the joint owners, the Mishima-mura Village Office and Japan Railway Construction, Transport and Technology Agency (JRTT), on March 31, 2020.

The ferry can transport 250 passengers at maximum capacity together with 25 passenger automobiles, or six 12m long trucks. The vehicles can access the car deck through a ramp door at the stern on the starboard side. The car deck and the entrance to the passenger accommodation are connected by an elevator provided at the portside for the convenience of the aged and the disabled. The ship has now entered into transport service on the route that links Kagoshima and three islands, Takeshima, Ioujima, and Kuroshima, which belong to the Kagoshima Prefectural district.

The ship's hull form has been designed with the bulbous bow and single stern hull, and the propulsion and maneuvering system consists of two diesel engines, two drive shafts, and two Schilling rudders. Thus, the ship's propulsion efficiency and seaworthiness have improved greatly.

The ship rolling motion is also alleviated with fin stabilizers attached to the midsection of both sides of the hull. The maneuverability has been increased with two bow thrusters, and the Schilling rudders with maximum rudder angle of 70 degrees allow ship maneuvers at very low speed.

Principal particulars

L (o.a.) x B x D x d: 89.60m x 15.40m x 10.35m x 4.30m (at full load)
DWT/GT: About 530t/1,850
Main engine: Daihatsu 6DKM-36e diesels x 2 units
M.C.O.: 3,400kW x 600/241min^{-1} x 2
Speed, service: 19.09kt
Classification: JG (Limited to coastal areas)
Registry: Japan
Completion: March 31, 2020

Shipbuilding and Marine Engineering in Japan 2020 now available

Shipbuilding and Marine Engineering in Japan 2020 has been published by the Japan Ship Exporters' Association (JSEA). The publication (210mm wide x 285mm tall, four color and 64 pages) outlines the latest shipbuilding achievements, both ships and advanced technologies. The details of the ships and shipbuilding technology are also available in a CD-ROM for convenient access. Major contents include the current status of the Japanese shipbuilding industry, recent trends in ship technology, new completions, new shipbuilding technology, navigation systems, energy-saving equipment and systems, software for shipbuilding rationalization, and building and repairing facilities, which have been introduced in the last two years.

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JAL KAMADHENU

Builder: Imabari Shipbuilding Co., Ltd.
Ship type: Bulk carrier
L (o.a.) x B x D: 228.9m x 35.0m x 19.9m
DWT/GT: 84,000t/45,500
Main engine: 6S60ME-C7.1 diesel x 1 unit
Speed, service: 14.5kt
Classification: ClassNK
Completion: January 24, 2020

STAR GAIA

Builder: Mitsui E&S Shipbuilding Co., Ltd.
Hull No.: 1950
Ship type: Bulk carrier
L (o.a.) x B (mld) x D (mld) : 199.99m x 32.25m x 19.45m
DWT/GT: 64,057t/36,463
Main engine: Mitsui-MAN B&W 6S50ME-B9.3 diesel x 1 unit
Speed: about 14.5kt
Complement: 25
Classification: NK
Registry: Singapore
Completion: November 27, 2019

AMAPOLA SOYA

Owner: Heartland Ferry Co., Ltd.
Builder: Naikai Zosen Corp.
Ship type: Passenger/Ro-Ro vehicle ferry
L (o.a.) x B x D x d (ext.): 96.50m x 15.00m x 10.05m x 4.10m
DWT/GT: 640t/4,280
Main engine: Daihatsu-6DCM-32e diesel x 2 units
(Propulsion system: 2 shafts 2 propellers)
Speed, service: 19.25kt
Classification: JG (Limited to coastal area)
Registry: Japan
Completion: January 24, 2020

CLARA INSIGNIA

Owner: Aono Marine Co., Ltd.
Builder: Shin Kurushima Dockyard Co., Ltd.
Hull No.: S-6020
Ship type: Bulk carrier
L (o.a.) x B x D : 199.9m x 32.26m x 18.70m
DWT/GT: 61,300t/35,040
Main engine: 6S50ME-B9.5 diesel x 1 unit
Speed, service: 14.5kt
Classification: ClassNK
Registry: Marshall Islands
Completion: October 21, 2019

BLUE BUTTERFLY

Owner: Lepta Shipping Co., Ltd.
Builder: Onomichi Dockyard Co., Ltd.
Hull No.: 752
Ship type: Product/chemical tanker
L (o.a.) x B x D x d (ext.): 175.00m x 32.20m x 19.05m x 13.10m
DWT/GT: 49,995t/29,668
Main engine: Mitsui MAN B&W 6S50ME-B9.5 diesel x 1 unit
Speed, service: 14.9kt
Classification: ClassNK
Registry: Panama
Completion: November 13, 2019

CRYSTAL VALERIAN

Owner: Kumiai Navigation (Pte) Ltd.
Builder: Sasaki Shipbuilding Co., Ltd.
Hull No.: 707
Ship type: LPG carrier
L (o.a.) x B x D x d (ext.): 99.98m x 17.20m x 7.80m x 6.10m
DWT/GT: 4,920t/4,324
Main engine: Daihatsu Diesel 6DCM-32eL x 1 unit
Output: 2,750kW x 750rpm
Speed, service: 13.20kt
Classification: BV
Registry: Singapore
Completion: February 28, 2020