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MES-S delivers BRIGHT CREST, 310,000DWT VLCC

—5th ship of MES Eco-Ship "neoVLCC" series—

Mitsui E&S Shipbuilding Co., Ltd. (MES-S) completed and delivered the 310,000DWT VLCC, BRIGHT CREST (HN: 1936), at its Chiba Works on September 11, 2019. The vessel is a VLCC featuring the largest deadweight and cargo oil tank capacity with dimensions complying with major port restrictions in Japan. The vessel is also the fifth of the MES "neo VLCC" series featuring excellent fuel efficiency as a next-generation eco-ship and the fifth in the Eco-Ship line-up of the MES "neo series" starting from the "neo66BC," a 66,000DWT type bulk carrier.

The "neoVLCC" is the largest class of VLCCs with a deadweight of over 310,000 metric tons and dimensions complying with major port restrictions in Japan, together with improved propulsion performance and transport efficiency achieved by state-of-the-art energy saving technologies. The latest bow and stern form, high efficiency propeller and energy saving devices provide higher energy efficiency and environmental friendy chracteristics.

The vessel is equipped with a SO_x scrubber as an exhaust gas treatment equipment. This is an advanced technology corresponding to MARPOL regulations for SO_x emissions. Furthermore, the vessel is equipped with a vapor emission control system (VECS).

Fuel oil consumption of the vessel is further improved by the G-type electronically controlled marine diesel engine, MITSUI-MAN B&W 7G80ME-C9.5. The waste heat recovery system (WHRS) utilizes main engine exhaust gas energy, and the vessel has a turbo generator system and main engine tuned to the optimum condition, which reduces the ship operating costs. Cargo oil tanks and ballast water tanks are coated in accordance with the IMO Performance Standard for Protective Coatings (PSPC) to enhance corrosion resistance.

The vessel complies with IMO Noise Code and ILO/MLC, 2006 (Maritime Labor Convention, 2006), so improving the working environment for the ship's crew.

Principal particulars

Length (o.a.):	339.5m
Breadth (mld.):	60.00m
Depth (mld.):	28.50m
DWT/GT:	312,501t/160,047
Main engine:	Mitsui-MAN B&W 7G80ME-C9.5 diesel x 1 unit
Complement:	30
Classification:	ClassNK

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Imabari delivers 63,000DWT-type New I-STAR series bulker, ZAGORI

Imabari Shipbuilding Co., Ltd. completed the 63,000DWT bulk carrier, ZAGORI, at Shin Kasado Dockyard Co., Ltd., a group company of Imabari, on August 29, 2019. The vessel is the 200th of the I-STAR series consisting of the 61,000DWT-type "IS" I-STAR and 63,000DWT-type "IS" New I-STAR series.

The 61,000DWT "IS" I-STAR bulk carrier series developed by Imabari was first introduced as the IKAN SENYUR built at the Shin-Kasado Dockyard on September 13, 2010. In 2013, the I-STAR series was followed by the 63,000DWT "IS" New I-STAR series, with 2,000 tons greater deadweight and reduced fuel consumption. In 2015, the 100th newbuilding of the 61,000DWT-type "IS" I-STAR was completed in five years since completion of the first vessel.

The I-STAR series was designed to correspond to the maximum Handymax type and to be suitable for carrying various cargoes including grain, coal, hot steel coils, long steel products, cement, and iron ore.

The 200th newbuilding of the I-STAR series, the present ZAGORI, was achieved in nine years since the first ship of the series. The New I-STAR series has greatly increased operational efficiency resulting from the improved main propulsion unit and energy saving technologies together with the use of hybrid fins, weather adapted duct (WAD), etc. I-SATR series vessels are now well known as eco-ships and much appreciated in shipping circles.

Principal particulars

Builder: Shin Kasado Dockyard Co., Ltd./Imabari Shipbulding Co., Ltd.

Ship type:	Bulk carrier
L (o.a.):	199.9m
Breadth:	32.24m
Depth:	19.15m
Deadweight:	63,000t
Completion:	August 29, 2019

JMU completes 311,000 DWT crude oil tanker, TANZAWA

Japan Marine United Corporation (JMU) delivered the TANZAWA, a 311,000 DWT crude oil tanker, to Manatee Shipholding S.A. at its Kure Shipyard on October 3, 2019. This is the eighth vessel of the new eco-type Malaccamax VLCC series developed after integration of Universal Shipbuilding Corporation and IHI Marine United Inc. Principal particulars have been optimized for transportation between the Middle East and Japan, including satisfying restrictions of domestic ports. Various latest technologies developed through JMU's extensive experience in building tankers have been incorporated into the vessel.

High propulsion performance was achieved by the application of the lower resistance and high efficiency hull form, and optimized energy saving devices such as the Super Stream Duct®, SURF-BULB® and ALV-Fin®. In addition, good sea performance was achieved by use of the low wind resistance accommodation house and unique bow shape called the "LEADGE-BOW®." Furthermore, fuel oil consumption was further improved by the installation of a new electronically controlled marine diesel engine, low friction paint, and large diameter propeller. The vessel satisfies the Energy Efficiency Design Index (EEDI) phase 2, which is required for vessels contracted for construction on or after 2020.

The vessel is designed to ensure compliance with future environmental rules and regulations by incorporating the Ballast Water Management System and the inventory list of hazardous materials. In addition, the vessel is equipped with a SO_x scrubber to comply with MARPOL ANNEX VI Regulation 14. All these features ensure the design effectiveness in energy-saving and environmental friendly performance.

Principal particulars

L(o.a.) x B x D x d: 339.5m x 60.0m x 28.5m x 21.085m

DWT/GT:	311,374t/160,597
Main engine:	WinGD W7X82 diesel x 1 unit
Speed, service:	15.5kt
Complement:	34
Classification:	ABS

Kawasaki's 59th delivery of LPG carrier with SO_x scrubber, NS DREAM

Kawasaki Heavy Industries, Ltd. has delivered the NS DREAM (HN: 1739), an 82,200m³ capacity liquefied petroleum gas (LPG) carrier, to Astomos Energy Corporation. This is the 59th LPG carrier, and the KHI's second vessel to include a SO_x scrubber.

This vessel adopts Kawasaki's uniquely developed bow shape called SEA-Arrow, which significantly improves propulsion performance by minimizing bow wave resistance.

The main engine powering the vessel is an energy-efficient, electronically-controlled, ultra-long-stroke, two-stroke low-speed diesel engine. In addition, the Kawasaki rudder bulb system with fins (RBS-F) and the semi-duct system with contra fins (SDS-F) contribute to reducing fuel consumption.

To satisfy new restrictions on SO_x emissions which will be implemented by the International Maritime Organization (IMO) in 2020, the vessel includes a set of SO_x scrubber at the exhaust gas outlets of the main engine and the power generation engine. With this system, general fuel oil can continue to be used after the regulations are tightened, without the need of switching to low sulfur fuel oil.

Four independent cargo tanks are installed in the cargo holds for carrying liquefied petroleum gas. The tanks are designed to provide optimal thermal insulation and absorb low-temperature contraction.

The cargo tanks are made with special cryogenic steel to load LPG with a minimum temperature of minus 46°C. The tanks are wrapped in urethane foam for thermal insulation.

The vessel is designed to be fully compliant with the New Panamax requirements, so can navigate the newly expanded Panama Canal, which was completed in June 2016.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 229.90m x 226.00m x 37.20m x 21.00m x 11.20m
DWT/GT: 54,052t/47,236
Cargo hold capacity: 82,388m³
Main engine: Kawasaki-MAN B&W 7S60ME-C8.2 diesel x 1 unit
Complement: 29
Classification: ClassNK
Registry: Panama
Delivery: June 28, 2019

MHIMSB completes new generation MOSS-type LNG carrier MARVEL HERON

Mitsubishi Shipbuilding Co., Ltd. (MHIMSB), a group company of Mitsubishi Heavy Industries, Ltd. (MHI) completed construction of the MARVEL HERON (HN:2322), a new generation MOSS type LNGC with a tank capacity of 177,561m³, and delivered the vessel to MOL Cameron (No. 3) S.A., Inc. on September 26, 2019.

The vessel is equipped with a modified version of the highly reliable MOSS spherical tank, an apple-shaped tank with only the upper half protruding from the deck. This tank design effectively expands the ship's LNG carrying capacity without increasing its width, allowing passage through the new Panama Canal.

The propulsion system is a hybrid 2-shaft STaGE (Steam Turbine and Gas Engines) system combining a steam turbine and a gas-fired engine.

The ship is equipped with MHI's proprietary high-efficiency reheat marine steam turbine engine, or UST (MHI Ultra Steam Turbine Plant), dual-fuel generator engines that can burn both natural gas and oil, as well as an electric propulsion motor. Effective utilization of waste heat by the UST provides substantial improvement in plant efficiency, contributing to high-efficiency navigation at both low and high speeds.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 297.5m x 293.0m x 48.94m x 27.5m x 11.4m (designed)
Gross tonnage: 139,050
Cargo tank capacity: 177,561m³
Main Engines
1) Mitsubishi, MR21-II, marine steam turbine with reduction gear x 1 set
Output: 13,000kW x 62.0rpm
2) GE, N3 HXC 1000 J8, electric propulsion motor with reduction gear x 1 set
Output: 13,000kW x 62.0rpm
Speed, service: 19.5kt
Classification: ABS

Namura completes Dunkirkmax Capesize bulker, NIGHTSKY

Namura Shipbuilding Co., Ltd. delivered the NIGHTSKY, a 183,017DWT bulk carrier, to Laurel World Maritime S.A. at its Imari Shipyard & Works on November 19, 2019. The vessel is the fourth of the newly-developed 183,000DWT bulk carrier type with the following features.

The principal dimensions have been optimized to satisfy the restrictions of the Port of Dunkirk in France. Further improvement of propulsion performance and fuel saving were achieved with adoption of two energy saving devices, the Namura flow Control Fin (NCF) and the Rudder-Fin developed by Namura, an electronically controlled main engine, the latest model of high efficiency propeller, and low friction type anti-fouling paint.

The vessel is equipped with a main engine and generator engines compliant with Annex VI of the MARPOL 73/78 regulations to reduce NO_x emissions and an air seal type stern tube sealing device to reduce the risk of oil leakage. The centralized fresh water cooling system adopted for the machinery space equipment contributes to easy maintenance. To improve the environment of onboard living quarters, an elevator is installed for moving between the accommodation quarters and engine room, and the vessel complies with the SOLAS Chapter II-1 Regulation 3-12, Code on noise levels on board ships.

The ballast water treatment system to control the quality of ballast water is equipped for protection of the marine environment to comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments. The vessel has several storage tanks for appropriate management and discharge of drainage, sewage, rainwater and water used for cleaning cargo holds to satisfy port restrictions on such discharges.

Principal particulars

L (o.a.) x B (mld) x d (mld): 291.99m x 45.00m x 18.20m
DWT/GT: 183,017t/93,458
Main engine: MAN B&W 6G70ME-C9.5 diesel x 1 unit
Complement: 25
Classification: ClassNK
Registry: Bahamas
Completion: November 19, 2019

Oshima complets 4.3mil.-cf wood chip carrier, SOUTHERN TREASURE

Oshima Shipbuilding Co., Ltd. delivered the 4,300,000 cubic feet type wood chip carrier SOUTHERN TREASURE to Olamar Navegacion S.A. on October 31, 2019. This is the second delivery of this class of newly developed wood chip carrier.

The vessel has specifically been designed for wood chip transport and has installations consisting of a self-unloading system with three electric deck cranes, four hoppers, and conveyor systems to achieve high unloading efficiency. To prevent chip scattering, anti-scattering nets and water spraying systems are also provided for the hoppers. The electric power regenerated when lowering the crane supplements the inboard electric power demand to save energy.

This vessel has higher propulsion efficiency because of the large cargo hold capacity to load wood chip with lower density than other bulk cargoes. The increased propulsion efficiency was ensured by installing an electronically controlled main engine, a high efficiency propeller with larger diameter, and PBCF (Propeller Boss Cap Fins). Furthermore, the Oshima developed energy saving devices, "Advanced Flipper Fins," "Rudder Fin," and "Seaworthy Bow" are installed for improved propulsion efficiency.

This vessel has already achieved performamnce of over 30% less than the IMO reference line of EEDI (Energy Efficiency Design Index), which means less CO_2 emission per deadweight/nautical mile. A SO_x scrubber is also installed on the vessel to comply with the IMO SO_x regulations.

Principal particulars

L (o.a.) x B x D x d: 210.00m x 37.00m x 22.80m x 11.523m (Summer draft, ext.)
DWT/GT: 60,281t/49,702
Cargo hold capacity: 4,326,015 cf
Main engine: J-ENG 6UEC50LSH-Eco-C2 diesel x 1 unit
MCR: 7,430kW at 92.0rpm
Speed, service: abt. 14.2kt
Classification: ClassNK
Completion: October 31, 2019

Sanoyas completes Panamax bulk carrier, ROYAL LAUREL

Sanoyas Shipbuilding Corporation delivered the ROYAL LAUREL, a Panamax bulk carrier, to Leo Ocean, S.A. on December 18, 2019. The vessel built at the Sanoyas Mizushima Shipyard is the 17th of the series of 82,000DWT class Panamax bulk carriers developed by the company.

The vessel has larger cargo hold capacity and fuel consumption further improved by 10% compared with the previous 83,000DWT class ship which featured 10% improvement in fuel efficiency. Moreover, the vessel achieves Phase 2 level of the EEDI (Energy Efficiency Design Index: grams CO_2 per ton nautical mile) regulation that will apply to ships for which the building contract is placed on or after January 1, 2013.

The propulsion efficiency of the vessel has been improved using a low-speed & long-stroke electronically controlled main engine combined with a high-efficiency propeller as well as associated energy saving devices such as the SANOYAS developed STF (Sanoyas-Tandem-Fin (patent): max. 6% energy saving) on the stern shell and highly efficient appendages on the rudder, which also contribute to reduction of CO_2 emissions.

Eco-friendly features of the vessel are established by various countermeasures, which include the main engine compliant with the NO_x emission Tier II limit for the prevention of air pollution, a dedicated low sulphur diesel oil tank to cruise in ECAs (Emission Control Areas), Ballast Water Treatment System, and fuel oil tank protection for marine environment conservation. In addition, the vessel is provided with independent holding tanks for accommodation discharges, dirty hold bilgewater, and rainwater from the upper deck.

Furthermore, for improvement of maintenance, access trunks are arranged to secure easy access from the upper deck to the double bottom even under laden conditions. Wooden furniture in the accommodation increases officer and crew comfort in the vessel, and safe maneuverability is achieved with the well organized arrangement and rear visibility in the wheelhouse.

Principal particulars

Owner: Leo Ocean, S.A.
Hull No.: 1365
L (o.a.) x B x D x d: 229.00m x 32.24m x 20.20m x 14.668m
DWT/GT: 81,962t/43,380
Cargo hold capacity: 96,597m³
Speed, service: about 14.5kt
Complement: 25
Classification: ClassNK
Registry: Panama
Delivery: December 18, 2019

Naikai completes 875GT passenger/car ferry, KYOKUYO MARU

Naikai Zosen Corporation has completed the 875GT passenger/car ferry, KYOKUYO MARU, at the Setoda Shipyard, which was delivered to Ishizaki Kisen Co., Ltd. of Japan last September. The ferry is now in the coastal transport service on the Matsuyama-Kure-Hiroshima route in the Seto Inland Sea. The ferry can accommodate 300 passengers normally, or 428 passengers in an emergency/disaster.

The ship's propulsion system uses two engines and two propellers, and an eco-cap is attached to each propeller to increase the propulsion performance. The bow thruster installed at the bow section allows easy berthing and unberthing.

A car roll-on/off ramp door is provided at the bow and stern. The vehicle deck has a capacity of loading six 12m long trucks and two 15m long trucks, or 33 passenger automobiles.

The hull has been designed with a vertically cut-off shape bow to bring the ship alongside a quay, and the stern form is the ordinary type to improve the propulsion efficiency and seaworthiness. An elevator is provided for the aged and the disabled to connect the vehicle and promenade decks at the port side.

Principal particulars

L (o.a.) x B x D x d: 62.63m x 13.00m x 3.90m/9.10m (vehicle deck/promenade deck) x 2.80m (designed load draft)
DWT/GT: 356t/875
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 officers and crew
Classification: JG (smooth water area)
Registry: Matsuyama City, Ehime Pref., Japan
Completion: September 26, 2019

BAMBOO STAR

Builder: Minaminippon Shipbuilding Co., Ltd./Imabari Shipbuilding Co.,Ltd.
Ship type: Bulk carrier
L (o.a.) x B x D: 179.97m x 29.8m x 15.0m
DWT/GT: 37,800t/23,300
Main engine: 6S50ME-C8.2 diesel x 1 unit
Speed, service: 14.5kt
Classification: ClassNK
Completion: December 6, 2019

DOUKATO

Owner: Ginza Shipping S.A.
Builder: Sasebo Heavy Industries Co., Ltd.
Hull No.: S856
Ship type: Bulk carrier
L (o.a.) x B x D x d: 229.00m x 38.00m x 19.10m x 13.49m
DWT/GT: 85,123t/46,993
Main engine: MAN B&W 6S60ME-C8.2 diesel x 1 unit
Speed, service: 14.1kt
Classification: ABS
Registry: Malta
Completion: October 18, 2019

WONDERFUL WORLD

Owner: Hawk Marine Corporation S.A.
Builder: Saiki Heavy Industries Co., Ltd./Onomichi Dockyard Co., Ltd.
Hull No.: 764
Ship type: Bulk carrier
L (o.a.) x B x D x d: 179.9m x 30.00m x 15.10m x 10.50m
DWT/GT: 37,367t/23,765
Main engine: MAN B&W6S46ME-B8.5 diesel x 1 unit
Speed, service: 14.7kt
Classification: ClassNK
Registry: Majuro
Completion: July 10, 2019

TAHO OCEANIA

Owner: Ta-Ho Maritime Corporation
Builder: Shin Kurushima Dockyard Co., Ltd.
Hull No.: S-6018
Ship type: Cement carrier
L (o.a.) x B x D : 157.00m x 26.00m x 14.80m
DWT/GT: 23,547t/16572
Main engine: B&W6S40ME-B9.5 diesel x 1 unit
Speed, service: 13.6kt
Classification: ClassNK/CR
Registry: Taiwan, Republic of China
Completion: September 5, 2019

BABITONGA

Owner: Great Homes Maritime, S.A.
Builder: Tsuneishi Shipbuilding Co., Ltd.
Hull No.: 1589
Ship type: Bulk carrier
L (o.a.) x B x D: 229.00m x 32.26m x 20.00m
DWT/GT: about 81,600t/about 43,400
Main engine: MAN B&W 6S60MEC-8.2 diesel x 1 unit
Speed, service: 14.50kt
Classification: ClassNK
Registry: Panama
Completion: October 25, 2019

CSC LEADER

Owner: China Steel Express Corporation
Builder: Japan Marine United Corporation
Hull No.: 5168
Ship type: Bulk carrier
L (o.a.) x B (mld.) x D (mld.) x d (mld.): max.299.99m x 50.00m x 25.00m x 18.4m
DWT/GT: 208,826t/106,910
Main engine: MAN-B&W 7S65ME-C8.2 x 1 unit
Speed, service: 14.7kt
Complement: 25
Classification: CR/NK
Completion: October 31, 2019