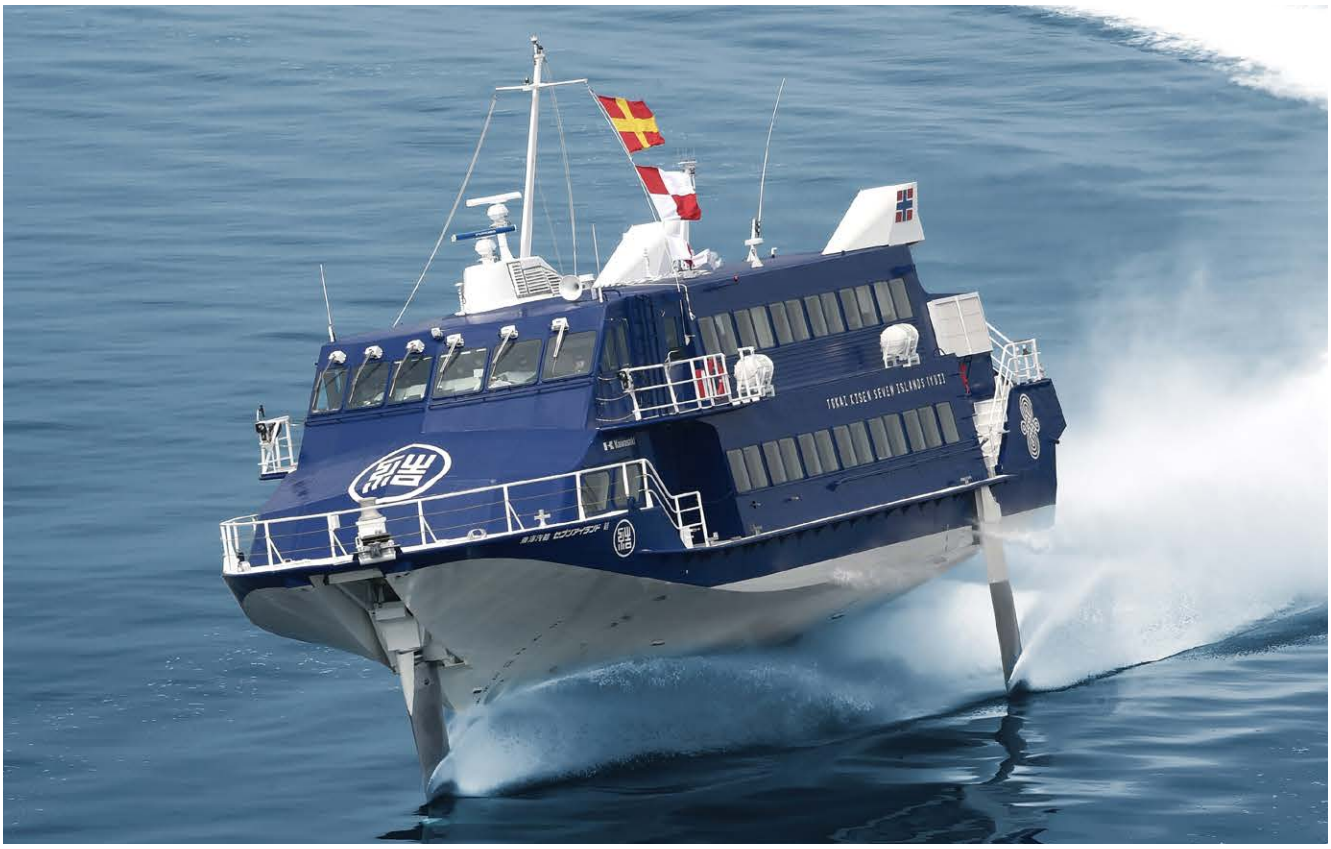
SEA-Japan

No. 403 Oct - Nov. 2020

KHI delivers JETFOIL passenger ship, SEVEN ISLAND YUI, to domestic co-owners



Kawasaki Heavy Industries, Ltd. delivered the SEVEN ISLAND YUI, a super-high-speed passenger ship, to the co-owners, Tokai Kisen Co., Ltd. and the Japan Railway Construction, Transport and Technology Agency (JRTT), on June 30, 2020. This passenger ship is the Kawasaki JETFOIL type, the first built in the last 25 years, and was put into regular service between the Tokyo Takeshiba Terminal and the Izu Islands on July 13. Kawasaki concluded a manufacturing license agreement by taking over the rights to produce and sell JETFOILs from The Boeing Company in 1987, and previously built 15 JETFOILs between 1989 and 1995.

The JETFOIL utilizes fully submerged foils at the fore and aft of the hull to lift the hull over the sea surface. Two waterjet propulsors driven by two gas turbine engines discharge three tons per second of seawater from jet nozzles at the tail end of the aft JETFOIL. This allows the ship to travel at speeds of over 80 km/h.

The JETFOIL can provide passengers with a comfortable ride even in waves as high as 3.5m and change direction smoothly by banking inward like an aircraft so that passengers can enjoy seasickness-free travel. Moreover, the SEVEN ISLAND YUI is the first JETFOIL coping with requirements for the disabled and the aged by providing various barrier-free facilities.

Principal particulars

Length, overall:	27.4m (with hydrofoils down)
Width, molded:	8.5m
Sea speed:	43kt
Accommodation capacity:	241 passengers
Completion:	June 30, 2020

For further information please contact: Website: http://www.jsea.or.jp

JAPAN SHIP EXPORTERS' ASSOCIATION

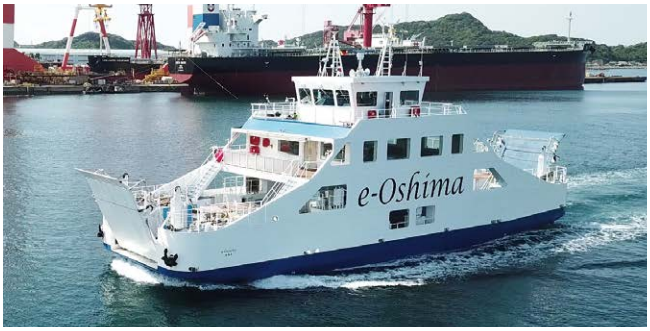
15-12, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 Tel: (03) 6206-1661 Fax: (03) 3597-7800 E-Mail: postmaster@jsea.or.jp

Ship Of The Year Award 2019

Winner is electric battery-driven ferry E/V e-Oshima

The Japan Society of Naval Architects and Ocean Engineers has selected the E/V e-Oshima for The Ship of the Year Award 2019, which is given to the most innovative ship built in Japan every year based on technical, artistic and social considerations. This year, the 30th annual event, had 12 ships to consider.

The candidate announcement meeting and the selection meeting for the Ship of the Year Award 2019 took place on July 27 with a web conference due to the constraints of COVID-19. In consequence, the Award 2019 was given to the ferry e-Oshima propelled with a battery-driven unit and an automatic navigation system, achieving zero emissions. Other winners of individual sectors were the KITAKAMI (Large passenger ship sector), SEA PASEO (Small passenger ship sector), UTASHIMA (Small cargo ship sector), YASHIO (Fishing/fishery research ship sector), and ISHIN (Work vessel/special service ship sector). The prize award ceremony, a joint event organized by the three academic societies in the maritime science sector, took place at the Kaiun Club on September 25.



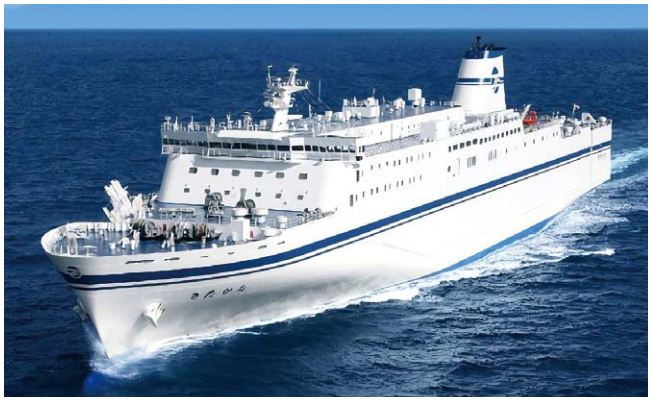
E/V e-Oshima

The e-Oshima has achieved zero emission operation with automatic navigation system. The ship, a short haul ferry, can navigate by electric power that is supplied from 600kW lithium ion batteries, which supplies inboard electric power demand besides ship propulsion. This permits low-noise, vibrationless, and clean ship operation. Automatic navigation system enables automatic collision avoidance with other ships and prevents running aground. (See SEA-Japan No. 396)

Winners of individual sectors

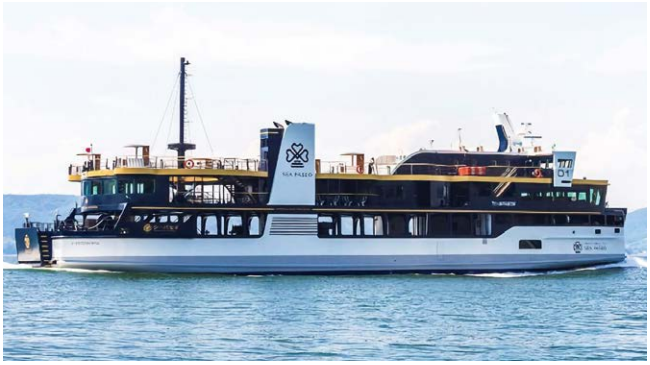
KITAKAMI (Large passenger ship sector)

Now in service on the route between Sendai (Fukushima Pref.) and Tomakomai (Hokkaido), the KITAKAMI built by Mitsuibishi Shipbuilding Co. Ltd. has increased numbers of private cabins by discontinuing a big common room. Capsule-like bedrooms have been provided with increased privacy and security and functional inboard life. Moreover, the ferry has decreased energy consumption and CO_2 emissions by 10% in comparison with the predecessor under the same ship speed conditions.



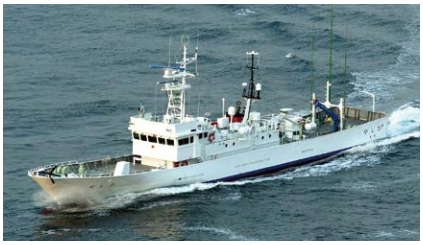
SEA PASEO (Small passenger ship sector)

The ferry SEA PASEO built by Kanda Shipbuilding Co., Ltd. is now put into regular service on the two hours and 40 minutes route between Hiroshima, Kure, and Matsuyama in the Seto Inland Sea. The ferry has been designed under the concept of "the pleasant park in the sea." The pleasant park is the ship itself, which is provided with contrivances encouraging passengers to walk around to find enjoyments on board the ship. So passengers can enjoy both the pleasant park environment and the Seto Inland Sea panorama.



UTASHIMA (Small cargo ship sector)

YASHIO (Fishing/fishery research ship sector)



ISHIN (Work vessel/special service ship sector)

JMU completes G-Series Dunkirkmax bulker, LADY DEENA

Japan Marine United Corporation (JMU) delivered an 182,000DWT bulk carrier at its Kure shipyard on June 17, 2020. This is the 25th vessel of the G-Series of Dunkirkmax bulk carriers, called G182BC. JMU previously built the G-Series Newcastlemax and Panamax bulk carriers, and the G182BC is the third type of the G-Series. The G182BC type has succeeded in reducing fuel oil consumption by using various and comprehensive measures for energy saving.

The G182BC type was developed with the expertise and vast experience of JMU. The SSD® (Super Stream Duct®) and SURF-BULB® (Rudder Fin with Bulb) are equipped fore and aft of the propeller, respectively, to much improve the propulsive performance. Furthermore, the unique bow shape of the LEADGE-Bow® can reduce additional resistance in waves, and the well-refined shape of the superstructure has low wind resistance.

The vessel is equipped with a SO_x scrubber to comply with MARPOL ANNEX VI Regulation 14. All these features ensure overall effectiveness in energy-saving and environmental friendly performance.

Principal particulars

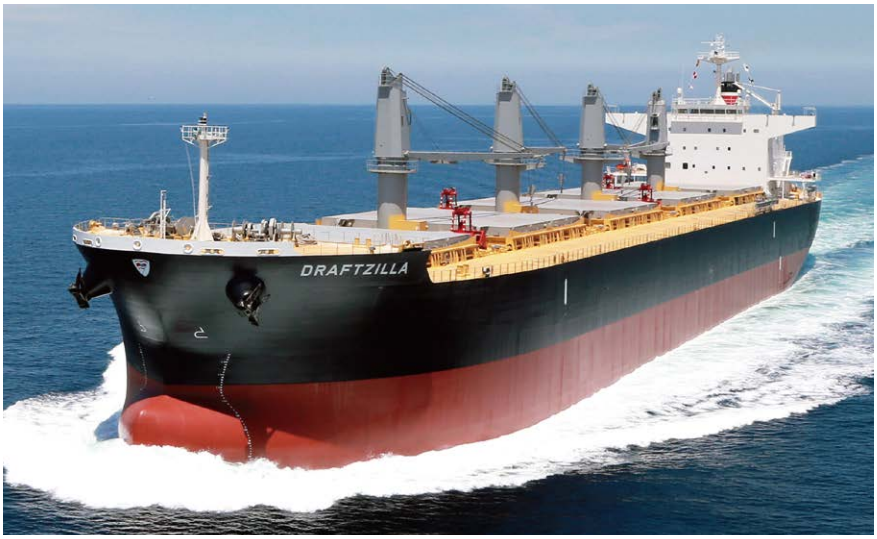
L (o.a.) x B x D x d: max. 292.0m x 45.00m x 24.55m x 18.15m
DWT/GT: 182,588t/93,575
Main engine: MAN B&W 7S65ME-C8.5 diesel x 1 unit
Speed: 15.05kt
Complement: 25
Classification: DNVGL

Mitsui E&S Shipbuilding delivers 21st neo66BC, DRAFTZILLA

Mitsui E&S Shipbuilding Co., Ltd. (MES-S) completed and delivered the 66,000DWT type bulk carrier, DRAFTZILLA (HN: 1948), at its Tamano Shipyard on June 24, 2020, which is the 21st ship of neo66BC series with the following special features.

This vessel has four cranes and five cargo holds and retains the superior usability of the Mitsui 56BC type. This vessel is designed with deadweight of more than 66,000 tons and capacity of more than 82,800 cubic meters for loading various cargoes such as coal, ore, grain, as well as lengthy/heavy cargoes such as steel pipes and hot coils. The hatch openings are the largest in this type of vessel for both length and width.

Research and interviews with ship owners and operators, investigations on ports all over the world, and present trade patterns suggest that the wide beam (over-Panamax) and shallow draft allow wide flexibility for operations and high transport efficiency. The new hull form maintains good performance under rough sea conditions as well as calm sea conditions and shows better maneuverability.



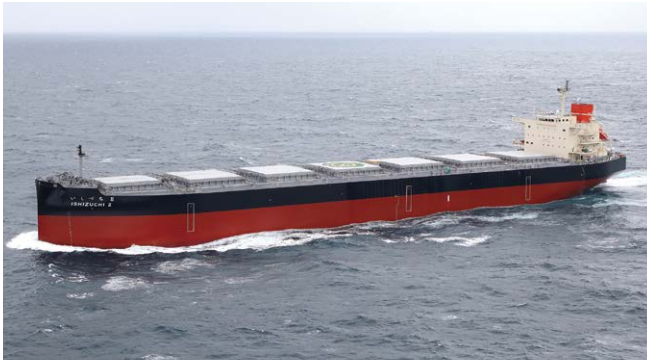
The main engine, Mitsui-MAN B&W 7S-50ME-B9.3 diesel, complies with MARPOL NO_x restriction (Tier-II) for exhaust gas emissions and has superior fuel oil consumption over a wide range of outputs. Fuel oil consumption of this vessel is less than that of the conventional Supramax bulk carrier despite its upsizing. The ship has low sulfur fuel oil tanks, which are designed for operation in ECAs (Emission Control Areas) considering the strengthened restrictions for SO_x emissions.

Principal particulars

L (o.a.) x B x D: 199.99m x 36.00m x 18.45m
DWT/GT: 66,509t/38,222
Main engine: Mitsui-MAN B&W 7S50ME-B9.3 diesel x 1 unit
Speed, service: about 14.5kt
Complement: 24
Classification: ClassNK
Registry: Marshall Islands
Delivery: June 24, 2020

Namura completes 85,000DWT-type bulk carrier, ISHIZUCHI II

Namura Shipbuilding Co., Ltd. delivered the 84,927DWT bulk carrier, ISHIZUCHI II, to Erica Navigation S.A. at its Imari Shipyard & Works on May 22, 2020. The vessel is the 22nd of the 85,000DWT-type bulk carrier series developed by Sasebo Heavy Industries Co., Ltd., and the first vessel constructed by Namura with the following features.



The vessel has been designed with a wide beam and shallow draught and is suitable to carry various cargoes such as coal, ore, grain and other bulk cargoes. Further improvement of propulsion performance and fuel saving can be 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.

For environmental protection, the vessel is equipped with a main engine and generator engines compliant with the Annex VI of 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. In addition, the vessel also complies with the SOLAS Chapter II-1 Regulation 3-12, Code on noise levels on board ships to improve the environment of the onboard living quarters.

The ballast water treatment system for quality control 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, rain water and water used for cleaning cargo holds. This will satisfy port restrictions on such discharges.

Principal particulars

L (o.a.) x B (mld) x d (mld): 229m x 38.00m x 13.49m
DWT/GT: 84,927t/47,109
Main engine: MAN B&W 6S60ME-C8.2 diesel x 1 unit
Complement: 24
Classification: NK
Registry: Liberia
Completion: May 22, 2020

Oshima completes 3,600,000cf wood chip carrier, GROVE ISLAND

Oshima Shipbuilding Co., Ltd. delivered a 3,600,000 cubic feet-type wood chip carrier to Ambitious Line, S.A. on June 11, 2020. This is the first delivery of the newly developed 3,600,000cf-type wood chip carrier.

The carrier has large cargo holds to load bulk light wood chips. To achieve high unloading efficiency, the self-unloading system has been provided with three electric deck cranes, four hoppers, and conveyor systems.

Regenerative electric power generated when lowering the crane boom is supplied for inboard electric demand to save energy consumption.

Other features have been considered for cargo handling efficiency and safety. The hopper shape has been designed to be straight and prevent chip accumulation on the hopper wall. Anti-scattering nets and water spraying systems have been installed for chip-scattering prevention from the hoppers. Low friction paint is coated on the inside shell of the cargo holds as well as the inside and outside of the hoppers to reduce adhesion of chips.

For higher propulsion efficiency, an electronically controlled main engine and a high efficiency propeller are equipped. Furthermore, Oshima originally developed energy saving devices, "Advanced Flipper Fins," "Rudder Fin," and "Seaworthy Bow" have been employed for further improvement of propulsion efficiency. This carrier has already achieved over 30% less from the IMO reference line of EEDI (Energy Efficiency Design Index), which means less CO_2 emissions per deadweight and nautical mile. The SO_x scrubber is also used to comply with IMO SO_x regulations.

Principal particulars

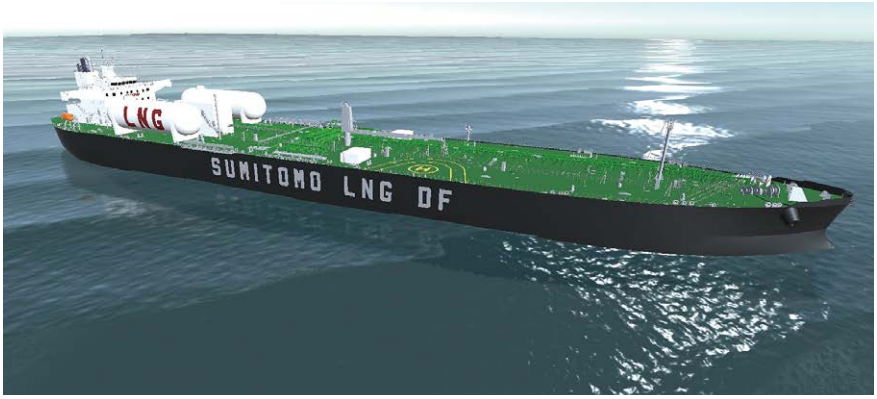
L (o.a.) x B x D x d: 199.99m x 32.26m x 22.98m x 11.51m (summer, ext.)
DWT/GT: 49,999t/41,838
Cargo hold capacity: 3,616,756cf
Main engine: J-ENG 6UEC50LSH-Eco-C2 diesel x 1 unit
MCR: 7,210kW at 99.0rpm
Speed, service: abt. 14.4kt
Classification: ClassNK
Completion: June 11, 2020

Medium-size high-pressure LNG dual-fueled tanker design

SHI obtains "Approval in Principle" from Lloyd's Register Group

Sumitomo Heavy Industries Marine & Engineering Co., Ltd. obtained an Approval in Principle (AiP) from Lloyd' s Register Group Limited for a medium-size tanker equipped with a high-pressure LNG dual-fuel system on July 9, 2020.

The tanker will employ an LNG dual-fuel propulsion system and large capacity LNG tank. Use of LNG fuel can substantially reduce the emissions of sulfur oxide (SO_x), nitrogen oxide (NO_x), and carbon dioxide (CO_2) from the main engine. An LNG-fueled engine has a problem with unburnt methane, which is a greenhouse gas, emitted into the atmosphere together with the exhaust gas. However, the ME-GI-type main engine designed by MAN Energy & Solutions will substantially reduce those emissions and also improve fuel efficiency. High-pressure LNG pressurized to approximately 300 bar will be supplied to the main engine through an LNG pump and vaporizer. As global efforts are made to accelerate the reduction of greenhouse gas emissions by international shipping, demand for environmental-friendly ships will grow.



Sumitomo's state of the art tanker will far exceed the level of Phase 3 of the Energy Efficiency Design Index (EEDI), which will be mandatory for ships deployed in international trade.

Sanoyas completes Supramax bulk carrier, FERMITA

Sanoyas Shipbuilding Corporation delivered the Supramax bulk carrier, FERMITA, constructed at the Mizushima Shipyard was delivered on June 25, 2020. This is the 12th vessel of the series of the Sanoyas newly developed 60,000DWT-type Supramax bulk carriers.

The vessel has large deadweight and can achieve high fuel efficiency under sea conditions with the length of less than 200m. The optimized hull form can contribute to better total performance of less fuel consumption and low emission in actual sea conditions including waves.

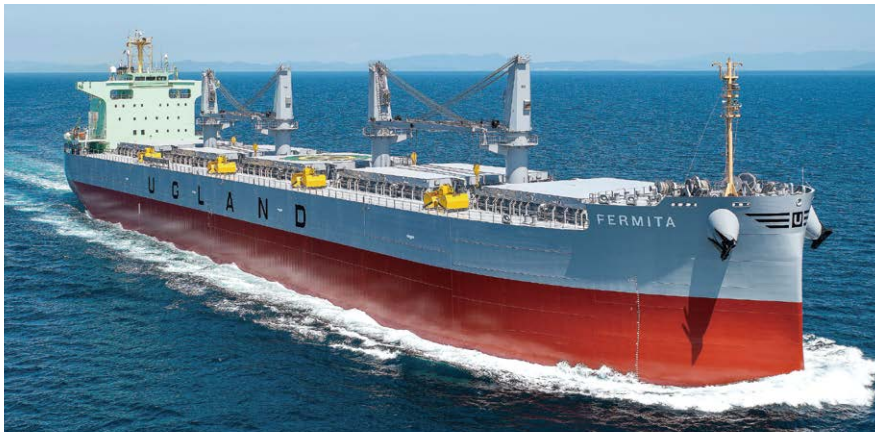
The improved propulsion efficiency has been achieved using a low-speed, long-stroke electronically controlled main engine combined with a high-efficiency propeller. Reduction of CO_2 emission has been assisted by associated energy saving devices, such as Sanoyas developed "STF" (Sanoyas-Tandem-Fin (patent): maximum 6% energy saving) on the stern shell and highly efficient appendages on the rudder.

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

The vessel has five cargo holds with hatch openings maximized to load various cargos such as grain, ore, coal, hot coils and steel pipes. Four 31-ton deck cranes for handling cargo are installed. Furthermore, for improvement of the vessel's maintenance, access trunks are arranged to allow access from the upper deck to the double bottom even under the laden condition.

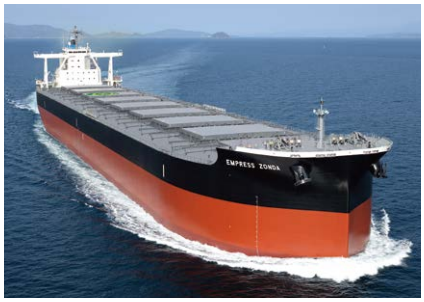
Principal particulars

Hull No.:	1366
L (o.a.) x B x D x d:	199.99m x 32.24m x 18.38m x 12.868m (summer)
DWT/GT:	60,480t/34,164
Cargo hold capacity:	77,067m³ (grain)
Speed, service:	about 14.3kt
Complement:	25
Classification:	ABS
Delivery:	June 25, 2020



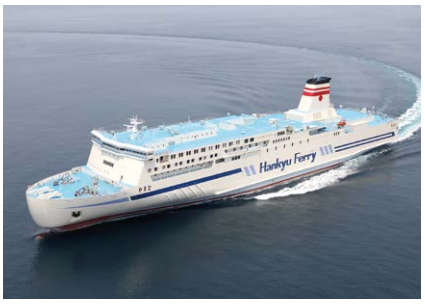
EMPRESS ZONDA

Builder: Japan Marine United Corporation
Hull No.: 5217
Ship type: Bulk carrier
L (o.a.) x B x D x d: max.292.00m x 45.00m x 24.55m x 18.15m
DWT/GT: 182,584t/93,575
Main engine: MAN B&W 7S65ME-C8.5 diesel x 1 unit
Speed, service: 15.05kt
Complement: 25
Classification: DNVGL
Registry: Panama
Completion: June 2, 2020



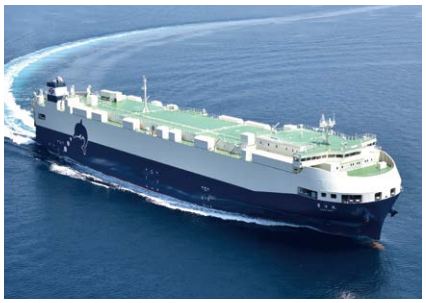
YAMATO

Owner: Hankyu Ferry Co., Ltd.
Builder: Mitsubishi Shipbuilding Co., Ltd.
Hull No.: 1215
Ship type: ROPAX ferry
L (o.a.) x L (b.p.) x B x D x d: 195.00m x 179.60m 29.60m x 20.60m (Deck 5) x 6.95m
DWT/GT: 7,176t (atd=6.95m)/16,292
Main engine: Wartsila 14V31 (MR 8,540kW x 750min^{-1}) x 2 units
Speed, service: 23.5kt
Classification: Japanese Government
Registry: Japan (Kobe)
Completion: June 24, 2020



HOYO MARU

Owner: Fukuju Shipping Co., Ltd./ Toyofuji Shipping Co., Ltd.
Builder: Naikai Zosen Corporation
Ship type: Ro/Ro ship
L (o.a.) x B x D x d (ext.): 169.99m x 28.00m x 24.89m x 6.75m
GT: 14,000
Main engine: Hitachi-MAN B&W 8S50ME-C9.6 diesel x 1 unit
MCO: 11,400kW x 117.0min^{-1}
Speed, service: 21.0kt
Classification: ClassNK
Completion: June 30, 2020

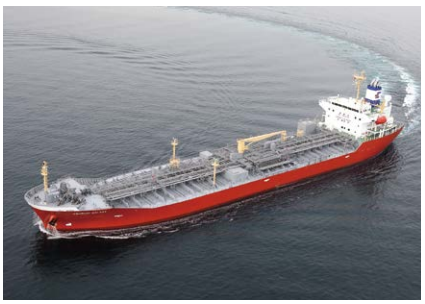


PACIFIC GOLD

Owner: Tanquart Marine Ltd
Builder: Onomichi Dockyard Co., Ltd.
Hull No.: 759
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: 49,950t/29,513
Main engine: Mitsui MAN B&W 6S50ME-B9.5 diesel x 1 unit
Speed, service: 15.3kt
Classification: ClassNK
Registry: Monrovia, Liberia
Completion: June 26, 2020

TSURUGI GALAXY

Owner: Panamanian owner
Builder: Shin Kurushima Hiroshima Dockyard Co., Ltd.
Hull No.: S-6058
Ship type: Chemical tanker
L (o.a.) x B x D: 151.5m x 27.1m x 14.2m
DWT/GT: 26,143t/16,589
Main engine: Makita 6S46ME-B8.5 diesel x 1 unit
Speed, service: 14.95kt
Classification: ClassNK
Registry: Panama
Completion: April 6, 2020



FJ BIANCA

Builder: Tsuneishi Shipbuilding Co., Ltd.
Hull No.: S1594
Ship type: Bulk carrier
L (o.a.) x B x D : 229.00m x 32.26m x 20.00m
DWT/GT: 81,600t/43,400
Main engine: MAN-B&W 6S60ME-C8.2 diesel x 1 unit
Speed, service: 14.5kt
Classification: LR
Registry: Panama
Completion: June 15, 2020