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New generation MOSS type

MHIMSB completes LNG carrier, DIAMOND GAS ORCHID

Mitsubishi Shipbuilding Co., Ltd. (MHIMSB), a group company of Mitsubishi Heavy Industries, Ltd. (MHI) completed construction of the DIAMOND GAS ORCHID (HN: 2324), a new generation MOSS type LNGC "SAYARINGO STaGE" with a tank capacity of 165,451m³ (100% full), and delivered the vessel to a joint venture of Mitsubishi Corporation and Nippon Yusen Kabushiki Kaisha (NYK Line) on June 29, 2018.

MHIMSB will continue to deliver solutions that enable stable energy supply and environmental benefits by constructing high quality and environmental-friendly LNG carriers with advanced technology.

The "SAYARINGO STaGE" type succeeds the "SAYAENDO" (pea pod) type, a vessel highly acclaimed for its improved Moss-type spherical tanks that deliver a high level of reliability. The adoption of apple-shaped (ringo) tanks in the "SAYARINGO STaGE" type has enabled increased LNG carrying capacity without changing the ship's beam, and incorporation of a hybrid propulsion system has significantly boosted fuel effiiciency compared with the "SAYAENDO".

"STaGE," an acronym deriving from "Steam Turbine and Gas Engines," is a hybrid propulsion system combining a steam turbine and engines that can be fired by gas. Effiicient use of the engine waste heat in the steam turbine results in substantial improvement in plant effiiciency, enabling high-effiiciency navigation throughout a full-range of speeds.

The adoption of a tank cover integrated with the hull structure, developed by MHI Group with technical support from Aker Arctic Technology Inc. of Finland, enables a lighter vessel while fully retaining overall structural strength. The new design also reduces wind resistance during navigation.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 293.5m x 289m x 48.94m x 11.505m x 11.050m

GT:	144,828
Cargo tank capacity:	165,451m³

Main engines:

1) Mitsubishi, MR21-II, Impulse, Reaction, Two Cylinders, Cross-Compound Marine Steam Turbine with Articulated Type Double Reduction Gear x 1 unit
   Output: 12,400kW x 61.0rpm
2) GE, N3 HXC 1000 J8, Electric Propulsion Motor with a Reduction Gear x 1 unit
   Output: 12,400kW x 61.0rpm

Service speed:	19.5kt
Classification:	ABS

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JMU completes mega container ship, ONE STORK

Japan Marine United Corporation (JMU) delivered the ONE STORK, a mega container ship, to Dorothy Ship Holding S.A. at its Kure Shipyard on June 12, 2018. This is the tenth of a 15 vessel series, newly constructed by JMU based on its expertise and experience taking the data and information based on the actual operation of the Far East - Europe route into consideration.

The vessel can load containers, 18 rows across and 11 tiers high in the cargo hold, and 20 rows across 9 tiers high on deck, with a total of 14,000-TEUs (including 1,120 reefer containers).

The vessel achieves high propulsion effiiciency through its advanced lower resistance hull form and JMU's original energy saving devices such as the Surf-Bulb® (Rudder Fin with Bulb) and L.V. Fin® (Low Viscous resistance Fin).

The vessel is designed to operate-with minimum ballast water under loading conditions, due to superior stability and hull strength. Hull construction adopts the structural brittle crack arrest design for ultra large container ships, which was developed by JMU and JFE Steel Corporation.

The main engine, a Diesel United WinGD W9X82, is electronically controlled with the common rail system and is environmentally friendly, so contributes to reduce the fuel oil consumption at various speed ranges.

Principal particulars

L (o.a.) x B (mld) x D (mld) x d (mld): 364.15m x 50.6m x 29.5m x 15.75m
DWT/GT: 139,335t/144,285
Main engine: DU-WinGD W9X82 x 1 unit
Speed: 22.5kt
Complement: 30
Classification: ClassNK

Oshima completes 34,000DWT-type box laker, FEDERAL DART

Oshima Shipbuilding Co., Ltd. delivered the 34,000DWT-type box laker, FEDERAL DART, to Federal Cornwallis Ltd. on April 5, 2018. The box laker has 34,000DWT capacity despite the shallow draft. The vessel has six holds employing wide hatch covers to improve cargo-handling effiiciency.

The vessel is suitable to carry various cargoes, such as grain, ore, coal, hot coils, ingots, dangerous cargoes, containers, and other bulk cargoes. Project cargoes can also be loaded on the hatch covers, since fixed-type D-rings are provided on the hatch covers for secure transport.

The box shape cargo holds facilitate cargo handling of unitized and packaged cargoes, which can be achieved by four 40t deck cranes. The tank top is also reinforced.

Fuel consumption of the vessel has been reduced by installing a set of Advanced Flipper-Fins, rudder bulb, low friction paint, and electronically controlled main diesel engine. The seaworthy bow with excellent seaworthiness is also adopted to improve speed performance under rough weather conditions. A bow thruster and high-lift rudder are adopted to achieve improved maneuverability at harbors.

Marine pollution prevention is ensured by the IBTS (Integrated Bilge Treatment System) applied to the vessel. Additionally, the vessel is assigned class DNV GL's Environmental Protection Notation, CLEAN. The vessel has notation ICE-1C (DNV GL) for navigation in cold regions.

Principal particulars

Length (o.a.): 199.98m
Length (b.p.): 195.50m
Breadth, mld.: 23.762m
Depth, mld.: 14.85m
Summer draft, mld.: 10.830m
DWT/GT: 34,492t/20,763
Cargo hold capacity: 41,651m^3
Main engine: Mitsui MAN B&W 5S50ME-C9.5 diesel x 1 unit
MCR: 6,050kW at 97.0rpm
Speed, service: 14.0kt
Classification: DNV GL
Completion: April 5, 2018

Shin Kurushima Dock completes two RORO/container ships

Shin Kurushima Dockyard Co., Ltd. has completed the 12,592GT versatile cargo ship, KYOWA FALCON, at Shin Kochi Jyuko Co., Ltd. (a member company of the Shin Kurushima Dockyard group) for Pacific Line Trading Inc., a Panamanian subsidiary company of Kyowa Shipping Co., Ltd. The KYOWA FALCON is the first of two sister ships and has already started transport service on the South Pacific routes.

The KYOWA FALCON has been designed to transport various cargoes including RORO vehicles and containers together with various commodities from ports of Asian countries to ports of Micronesia.

The ship measures 143.03m in overall length, 22.60m in breadth, and 14.4m in depth. The cargo hold consists of four compartments and decks, which can load containers, vehicles, construction machinery, steel materials, and miscellaneous goods for daily use. The ship is provided with a bow thruster to ensure safe and effiicient berthing and unberthing.

A rampway is located at the aft starboard side for loading and unloading of vehicles on and off the inboard decks. Loading of 557 units of vehicles is possible. Two deck cranes with a hoisting capacity of 40t are installed at the port side on the upper deck. The deck is permitted to accommodate 649TEUs including 100 reefer containers.

Shin Kurushima Dock recently completed construction of the KYOWA STORK, a sister ship of the KYOWA FALCON, and Kyowa Shipping Co. will further enhance its effiicient transport service in the South Pacific area.

Outline of KYOWA FALCON/KYOWA STORK

Owner:	Pacific Line Trading Inc.
Builder:	Shin Kurushima Dockyard Co., Ltd./Shin Kochi Jyuko Co., Ltd.
Ship names:	KYOWA FALCON/KYOWA STORK
Hull Nos.:	S-5961/S-5962
Ship type:	RORO/container cargo ship
L (o.a.) x L (b.p.) B x D:	143.03m x 134.00m x 22.60m x 14.40m
GT/DWT (S-5961):	12,592/12,084t
GT/DWT (S-5962):	12,592/12,032t
Cargo loading capacity:	557 vehicles 649TEUs (with 100 reefer plugs)
Main engine:	6UEC33LSE-C2 diesel x 1 unit
MCO:	3,630kW x 145min^{-1}
Speed, service:	About 14.0kt
Cruising range:	About 18,400 nautical miles
Complement:	25
Registry:	Marshall Islands
Classification:	ClassNK
Completion of S-5961/S-5962:	May 2 & August 8, 2018

Naikai builds 8,600GT passenger/car ferry, SILVER TIARA

Naikai Zosen Corporation has constructed and delivered the SILVER TIARA, an 8,600GT passenger/car ferry, to Kawasaki Kinkai Kisen Kaisha, Ltd. at its Setoda Shipyard. The ferry is now engaged in the short haul service between Tomakomai (Hokkaido) and Hachinohe (Aomori).

The SILVER TIARA has twin engines, twin propellers, and twin rudders. Cargo vehicles can roll on and off the ferry through the fore and aft ramp doors on the starboard side, and inboard rampways. The three car decks can load trucks, passenger cars, and large motorcycles.

For the aged and the disabled, an escalator is installed as a barrier-free facility on the starboard side, which directly leads passengers from the car decks and boarding gate to the entrance of the cabin decks.

The hull form uses a bulbous bow and single-hull stern to improve propulsion and seaworthiness. The ferry uses fin stabilizers to reduce rolling during navigation, and the two stern thrustersand two mariner rudders provide increased ease of berthing and unberthing.

Principal particulars

L(o.a.)xBxDxd: 148.80m x 23.40m x 14.10m x 5.80m
DWT/GT: 3,620t/8,543
Loading capacity
26 crew members
494 passengers
82 12m-long trucks
30 passenger cars
57 large motorcycles
Main engines:Makita-Mitsui MAN B&W 8S35ME-B9.5 diesel x 2 units/2 propellers
MCO:6,960kW x 167.0min^{-1} x 2 units
Speed, service: About 19.7kt
Completion: April 20, 2018

For Subsea Pipeline Inspection use

Basic Agreement reached on tests for AUV with robot arm

Kawasaki Heavy Industries, Ltd. has announced that a basic agreement was reached with The Underwater Centre (TUC), a marine testing and training facility in Fort William, Scotland, UK, on conducting a verification test of a prototype AUV equipped with a robot arm for subsea pipeline inspection. The test, scheduled for October 2018, will be the first such test in the world.

With a focus on the growing demand for pipeline maintenance in offshore oil and gas fields, Kawasaki has been developing leading-edge component technologies for AUVs, based on sophisticated submarine technologies fostered in-house over many years. Aiming at commercialization in FY 2020, Kawasaki is currently developing an AUV capable of underwater charging and transferring of inspection data to the mother ship–features that allow for longer deployment time–while autonomously locating and tracking pipelines at close range, including those buried under seabed sediment.

In November 2017, Kawasaki successfully completed a verification test at TUC for automated underwater docking of a prototype AUV to its charging station, involving contactless charging and large-capacity optical communication.

For the upcoming test, leveraging on synergies of its technologies, Kawasaki plans to use a prototype AUV equipped with a robot arm with an attached inspection tool unit (currently under development), to achieve autonomous locating and tracking of subsea pipelines. The test will focus on verifying the robot arm's capability to absorb the movement of the AUV due to tidal currents, and on verifying that the inspection tool unit can continuously track a pipeline under those conditions.

Kenji Tomida (Left), Vice President and Senior Executive Officer, Kawasaki; Fiona Hyslop (Middle), Scottish Cabinet Secretary for Culture, Tourism and External Affairs Steve Ham (Right), Commercial Director, The Underwater Centre

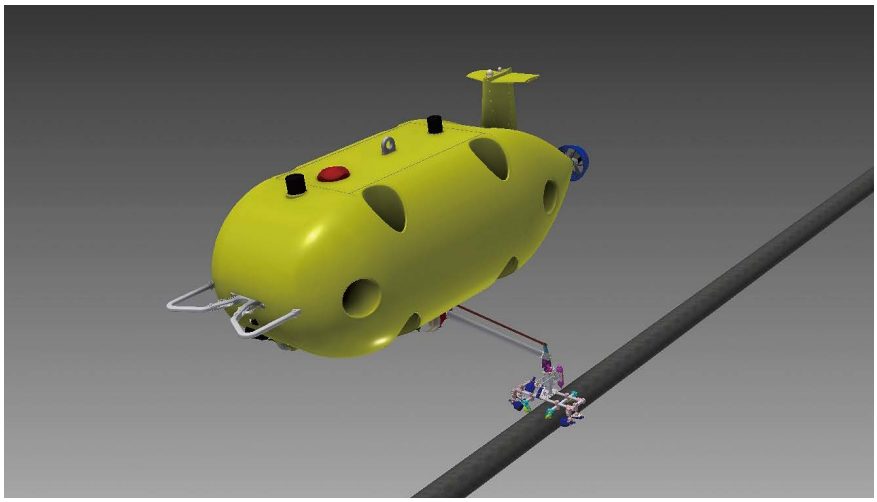
Scotland is a global leader in offshore development, innovating subsea technology for offshore oil and gas development. Reflecting the Scottish Government's strong interest in this collaboration, the basic agreement with TUC was signed in the presence of the Scottish Cabinet Secretary for Culture, Tourism and External Affairs, Ms. Fiona Hyslop, who was visiting Japan. She gave an address, saying,

"The Scottish Government's Subsea Action Plan, launched in January 2017 reflects our ambitions to support this important sector, not only in international oil and gas markets, but also to diversify into other sectors including renewables and deep-sea mining. I am delighted that Kawasaki Heavy Industries, Ltd, one of Japan's major companies, has decided to develop this innovative technology in Scotland that surely meets our ambitions. It is fantastic news for The Underwater Centre in Fort William." expressing her strong expectations for Kawasaki's AUVs.

Steve Ham, Commercial Director, The Underwater Centre said:

"The Underwater Centre has been really delighted to support KHI during the testing of their AUV in our seawater test site. We have built up a very good relationship over the development and delivery of the project and we look forward to welcoming them back to Fort William later this year and in future."

The agreement also states that TUC will be collaborating with Kawasaki on future development of underwater vehicle technology. The agreement will advance Kawasaki's commitment to further strengthening their partnership with the Scottish Government and TUC, in order to drive the development of technologies forward for AUVs and other underwater vehicles.



AUV equipped with robot arm for subsea pipeline inspection (Image)

NAMURA completes Malaccamax-type VLCC, TONEGAWA

Namura Shipbuilding Co., Ltd. delivered the DWT 312,858t very large crude oil carrier, TONEGAWA, built at its Imari Shipyard & Works, to Kawasaki Kisen Kaisha, Ltd. on July 12, 2018. The vessel is the first of the newly developed 310,000DWT-type VLCC complying with the Harmonized Common Structural Rule (CSR-BC&OT) for Namura.

The vessel is lengthened into about 339m, maximizing the loading capacity and propulsion performance by improving the hull form, and increasing safety and economic effiiciency. The vessel also complies with the latest requirements of the international regulations, such as IMO PSPC-COT and PSPC-WBT for corrosion protection of cargo oil tanks and water ballast tanks to increase safety of the vessel.

The propulsion performance has greatly been improved by adoption of energy saving devices developed by Namura, which include the Namura flow Control Fin (NCF) and the Rudder Fin attached to the stern, together with the wind force reduction type superstructure, hub vortex reduction type propeller boss cap "ECO-Cap," low-friction type antifouling paint applied to the outside shell, and an electronically controlled main engine which contributes to reduction of fuel oil consumption. For environmental safety, the vessel is equipped with a main engine and generator engine compliant with the Annex VI of MARPOL 73/78 regulations (Tier II) to reduce NO_x emissions.

The vessel has three large capacity cargo oil pumps that enable loading/unloading of three grades of cargo oils and an automatic unloading system for unloading cargo oils more effiiciently. The ballast water treatment system to control the quality of ballast water is equipped for protection of marine environment to comply with the International Convention for the Control and Management of Ships' Ballast Water and Sediments.

Principal particulars

L (o.a.) x B (mld.) x D (mld.) x d (mld.): 338.95m x 60.00m x 28.50m x 21.05m
DWT/GT: 312,858t / 160,057
Main engine: MAN B&W 7G80ME-C9.5 x 1set
Speed, service: about 14.95kt
Complement: 35 + 6 (Workers)
Registry: Japan
Classification: ClassNK

JSEA participates in SMM 2018 International Maritime Exhibition in Germany

JSEA together with four member companies participated in the SMM 2018, an International Maritime Exhibition, which was organized by the Hamburg Messe und Congress GmbH and held from September 4 through 7 at the Hamburg Messe in Hamburg.

This year's SMM, the 28th in the series, included 2,289 exhibitors from 69 countries, 26 of which presented national pavilions, and attracted as many as 50,000 visitors. The whole area of the exhibition space was 93,000m^2 consisting of 13 halls.

SMM 2018 took place under the themes of "Green Shipping" and "Digitalization" as the motto of "Trends in SMM-art Shipping. "Consequently, the exhibitors demonstrated products and technologies using touch-screens, simulators, VR (virtual reality) goggles, etc. Various seminars were also provided.

This was the third participation for JSEA. JSEA set up a Japanese Shipbuilding Stand, which is a unified exhibition by four Japanese shipbuilders, Japan Marine United Corporation, Mitsubishi Shipbuilding Co., Ltd., Namura Shipbuilding Co. Ltd., and Oshima Shipbuilding Co. Ltd. The Japanese shipbuilders demonstrated mainly new ship types and highly fuel-effiicient next-generation ships to many visitors including European shipowners. The exhibitors participated in communication with many foreign visitors.

Ms. Kikuko Kato, Consul-General of Hamburg Consulate-General of Japan, visited the association stand during the exhibition.

CASTILLO DE CALDELAS

Owner: La Arena Navigation S.A.
Builder: Imabari Shipbuilding Co., Ltd.
Ship type: LNG carrier
L (o.a.) x B x D: 296.98m x 48.7m x 27.0m
Cargo capacity: 178,803m^3
Main engine: 7G70ME-C9.2-GI diesel x 1 unit
Speed, service: 19.5kt
Classification: LR
Completion: June 11, 2018

NORDINDEPENDENCE

Owner: Nordindependence Shipping C.V.
Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.
Hull No.: 1392
Ship type: Tanker
L (b.p.) x B x D: 228.97m x 44.00m x 21.8m
DWT/GT: 112,000t/60,200
Main engine: Mitsui MAN B&W 6G60ME-C9.2 diesel x 1 unit
Speed, service: about 15.2kt
Classification: LR
Completion: June 14, 2018

SINLAU BULKER

Owner: Admiral Logistics Corporation
Builder: The Hakodate Dock Co., Ltd.
Hull No.: 902
Ship Type: Bulk carrier
L(o.a.) x B x D x d: 179.97m x 30.00m x 14.05m x 9.822m
DWT/GT: 34,485t/21,574
Main engine: MAN B&W 6S46ME-B8.5 diesel x 1 unit
Speed, service: 14.0kt
Complement: 24
Classification: NK
Completion: June 27, 2018

AFRICAN GANNET

Owner: African Gannet Shipping Co. Ltd.
Builder: Kanda Shipbuilding Co., Ltd.
Hull No.: 563
Ship type: Log & cargo ship
L (o.a.) x B x D x d (ext.): 179.9m x 30.0m x 15.0m x 10.527m
DWT/GT: 37,806t/23,224
Main engine: 6UEC45LSE-ECO-B2 diesel x 1 unit
Speed, service: 14.0kt
Registry: Bahamas
Classification: ClassNK
Completion: June 28, 2018

NORD KANMON

Owner: Lepta Shipping Co., Ltd.
Builder: Onomichi Dockyard Co., Ltd./ Saiki Heavy Industries Co., Ltd.
Hull No.: 727
Ship type: Bulk carrier
L (o.a.) x B x D x d (ext.): 199.90m x 32.26m x 18.60m x 13.00m
DWT/GT: 60,236t/34,808
Main engine: MAN B&W 6S50ME-B9.3 diesel x 1 unit
Speed, service: 14.6kt
Registry: Singapore
Classification: ClassNK
Completion: May 2, 2018

PEDHOULAS CEDRUS

Owner: Pinewood Shipping Corporation
Builder: Tsuneishi Shipbuilding Co., Ltd.
Hull No.: 1552
Ship Type: Bulk carrier
L (o.a.) x B x D: 229.00m x 32.26m x 20.00m
Main engine: MAN B&W 6S60ME-C8.2 diesel x 1 unit
Speed, service: 14.50kt
Registry: Cyprus
Classification: LR
Completion: June 14, 2018