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Universal completes 180,000 DWT bulker, SHIN KOHO

Universal Shipbuilding Corporation delivered the SHIN KOHO, a 180,000 DWT bulk carrier, at the Tsu Shipyard on May 31, 2011.

This is the 3rd vessel of the new design series for the Dunkirkmax bulk carrier with increased deadweight under restrictions of the ship dimensions.

The vessel has double side skin construction for cargo holds and fuel oil tanks to reduce flooding risk due to the ship side damage, and to improve cargo handling.

The vessel is equipped with high propulsion efficiency and energy saving devices, the SSD (Super Stream Duct) and Surf-Bulb (Rudder Fin with Bulb), in front of and behind the propeller, respectively.

The SHIN KOHO is the 17th vessel employing Leadge-Bow that reduces the added wave resistance in both the laden condition and the ballast condition. The Leadge-bow has superior performance at sea compared with the Ax-Bow, which is employed by more than 90 vessels.

The shape of the superstructures is designed to produce less air resistance. Deck machinery such as windlasses, mooring winches, and hatch covers are driven by electric motor system for oil leak prevention on the deck.

This vessel uses ME electronic control main engine which can optimize the combustion conditions by adjusting the fuel injection and exhaust valves electronically, and makes it possible to lower fuel oil consumption and emission.

The SHIN KOHO is the world's first vessel adopting a hybrid turbocharger power supply system for the main engine. The hybrid turbocharger consists of a turbocharger rotor connected to a generator for directly converting part of surplus turbocharger revolution energy into electric power, and the generator is available as a stand-alone marine generator instead of a conventional diesel generator under the normal sea going conditions, so contributes

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to reduction of the fuel consumption and carbon dioxide emission.

The power supply system was developed jointly by Nippon Yusen Kabushiki Kaisha, Monohakobi Technology Institute, Mitsubishi Heavy Industries, Ltd., and Universal Shipbuilding Corporation. Taiyo Electric Co., Ltd. and Hitachi Zosen Corporation also participated in the collaborative development.

The development project has been subsidized by the Ministry of Land, Infrastructure, Transport and Tourism and Nippon Kaiji Kyokai. Onboard tests on the energy-efficiency will be continued through navigation for further improvement.

Main engine (Hybrid turbocharger seen in the blue square line)

Principal particulars

L(o.a.) x L(b.p.) x B x D x d: 292.0m x 287.9m x 45m x 24.5m x 18.15m
DWT/GT: 182,128MT/93,031
Loading capacity: 193,396m^3
Main engine: MAN B&W 7S65ME-C x 1 unit
Speed: 15.35kt
Complement: 25
Classification: NK
Completion: May 31, 2011

Ship of the Year 2010 Award goes to Kyokuyo Shipyard-built car carrier

The Japan Society of Naval Architects and Ocean Engineers on May 31, 2011 selected the car carrier, CITY OF ST. PETERSBURG, built by Kyokuyo Shipyard Corporation for the 2010 Ship of the Year Award. The vessel's unique bulbous stem shape, which contributes to a significant reduction of air resistance, attracted attention and was highly appreciated by, the jury of the award.

Category awards were won, in the specialty vessel category, by the plant module carriers YAMATAI and YAMATO built by Mitsubishi Heavy Industries, Ltd. (for more details, see SEA-Japan No 341, June-July issue), each equipped with an Air Lubrication System (ALS) having an air blower for energy saving, and owned by NYK-Hinode Line, Ltd.; in the small passenger ship category, by the battery-powered vessel RAICHO I owned by the Tokyo University of Marine Science and Technology, and, in the fishing vessel and work vessel category, by the FUJI MARU NO. 2 built by Miho Shipyard Co., Ltd.

The CITY OF ST. PETERSBURG is a car carrier embodying thorough commitment to reduction of wind pressure resistance. The unique semispherical stem shape has been realized without sacrificing the payload space. The bulbous panel, formed by press-bending, constitutes a part of relatively distortion-free smooth hull shape. According to the society, "although a streamlined hull had been drawn for conceptual ships, its first realization has been highly appreciated." Efforts to reduce wind pressure resistance are embodied not only by the stem shape but also by the streamlined funnel and the round shape of the upper part of the hull. Another feature is a pillar-free inboard space, intended for greater cargo handling efficiency.

The award will be presented on July 22 at Kaiun Club in a joint commendation ceremony of three maritime academic institutions, also including The Japan Institute of Marine Engineering (JIME) and The Japan Institute of Navigation (JIN). JIME and JIN will respectively give the Marine Engineering of the Year 2010 Award and the Navigation Achievement Prize on that occasion.

CITY OF ST. PETERSBURG

YAMATAI [YAMATO]

RAICHO I (left) and FUJI MARU NO. 2 (right)

KHI completes 80,156m^3 LPG carrier, DERBY

Kawasaki Heavy Industries, Ltd. delivered the 80,156m^3 LPG carrier, DERBY (HN: 1666), to Xing Long Maritime S.A. The vessel is the 47th LPG carrier built by Kawasaki and the 8th of this particular model.

The carrier employs the Kawasaki's new bow form, SEA-Arrow, to minimize bow wave resistance and improve propulsive performance.

Four LPG cargo tanks are provided and made of special steel durable to low temperature of minus 46°C. Polyurethan foam is used as a heat insulation.

The main engine is a fuel-efficient ultra long-stroke two-cycle low-speed diesel engine and the Kawasaki rudder bulb with fins (RBS-F) is outfitted. The combined performance helps reduce the fuel consumption.

The environmentally designed fuel tank has double-wall construction to prevent ocean pollution.

Principal particular
L (o.a.) x L 8b.p.) x B x D x d: 226.00m x 222.00m x 37.20m x 21.00m x 11.20m
DWT/GT: 53,028t/45,812
LPG storage capacity: 80,156m^3
Main engine: Kawasaki-MAN B&W 7S60MC-C7 diesel x 1 unit
MCR: 14,000kW x 94rpm
Speed, service: about 16.95kt
Complement: 27
Classification: NK
Registered: Liberia
Delivery: Mar. 31, 2011

MES completes 56,000DWT type bulk carrier, NIPPON MARU

Mitsui Engineering & Shipbuilding Co., Ltd, (MES) completed the 56,000DWT type bulk carrier, NIPPON MARU (HN: 1740), and delivered to Princess Line S.A., Panama, at its Tamano Works. This is the 125th vessel of a series of 56,000 DWT type handymax bulk carrier having a large cargo hold capacity of more than 70,000m^3. This series called "Mitsui 56BC" is well reputed in the market and about 170 vessels including those delivered have been ordered.

The vessel has five cargo holds and is equipped with four deck cranes. Structural strength and arrangements are well designed to load various types of cargoes.

Hatch openings are the largest class in this segment both in length and width. Cargo holds have ample length to load long pipes and its strength is sufficient for loading heavy cargoes such as hot coils, etc.

The ship complies with IACS UR S25 and achieves both operational flexibility and enhanced structural safety.

The main engine and generator diesel engines satisfy the Environment Standards for Exhaust Gas and the IMO Standards for the Environment, respectively.

Ballast water can be exchanged during navigation for protection of marine environment.

Principal particulars
L (o.a.) x L (p.p.) x B x D: 189.99m x 182.00m x 32.26m x 17.90m
DWT/GT: 55,581MT/31,244
Main engine: MITSUI-MAN B&W 6S50MC-C diesel x 1 unit
MCO: 9,480kW x 127.0rpm
Service speed: 14.5kts
Complement: 24
Classification Society: NK
Flag: Panama
Delivery: May 12, 2011

MHI completes 6,400 units RO/RO type vehicle carrier, ANTARES LEADER

Mitsubishi Heavy Industries, Ltd. (MHI) completed construction of the RO/RO type vehicle carrier, ANTARES LEADER, for Nippon Yusen Kabushiki Kaisha (NYK Line) at the Kobe Shipyard & Machinery Works on June 7, 2011. The Japanese flag vessel has a car carrying capacity of approximately 6,400 units based on the standard passenger car.

The main engine is an electrically controlled diesel engine, Mitsubishi UE 7UEC60LSII-Eco, which has the features of low fuel oil consumption and stable performance. In addition to the environmental friendly main engine, MESHIP (Mitsubishi Energy Saving Hybrid Inverter Pump), the inverter control system for main cooling sea water pump is installed to optimize pump operation to reduce CO_2 emissions.

The vessel adopts a refined hull design below the water line, the wind pressure reducing design for the upper deck of the bow, and the double bottom construction for the bunker oil tanks, which reduces the risk of oil leakage from the tanks in case of stranding.

In addition to the above mentioned environmental consideration, the fully enclosed type wheelhouse is adopted for crew's efficient and comfortable daily work.

Principal particulars

L (PP) x B x D: 192.00m x 32.26m x 34.52m
Gross tonnage: 60,284
Car carrying capacity: approximately 6,400 passenger cars (RT43 type)
Main engine: Mitsubishi-UE 7UEC60LSII-Eco diesel x 1 unit
Speed, service: about 20.35kt
Complement: 30
Classification: Nippon Kaiji Kyokai NS*(RORO EQ C V & DG), MNS*(M0), IWS
Completion: June 7, 2011

Naikai completes passenger/car ferry, MANYO

Naikai Zosen Corporation has completed construction of the 1,560GT passenger/car ferry, MANYO, for Kyushu Shosen Co., Ltd. at the Setoda Works.

The ferry has been designed with two engines, two propellers, and two rudders for increased propulsion efficiency and maneuverability. The bulbous bow and split stern help improve the ship thrust increase. A bow thruster and Schilling rudders have been used for smooth berthing and unberthing.

The through-car decks facilitates roll-on and roll-off of cars through the aft-ramp door. Fin stabilizers attached to the ferry reduce ship rolling during navigation, and elevators are provided to carrry aged and disabled people from the boarding deck, or car decks, directly to cabin entrances.

The ferry has been put in service on the Goto Route, Northern Kyushu.

Principal particulars

L (o.a) x B x D x d: 86.50m x 14.50m x 10.40m x 4.30m
DWT/GT: 738t/1,551
Vehicle loading capacity: 18 eight-ton trucks
Pasenngers: 482 people within six hours
Crew: 18
Main engine: Daihatsu 6DCM-32 diesel x 2 units (twin propellers)
MCR: 2,942kW x 750/186 min^{-1}
Speed, max.: 20.2kt (at trial)
Classification: JG
Port, registered: Nagasaki

Oshima launches ECO-Ship 2020 for LNG-fueled ship

—Collaborative development with DNV—

Oshima Shipbuilding Co., Ltd. and DNV have completed the first milestone of a joint programme to develop the ECO-Ship in the future. Oshima ECO-Ship 2020 is a LNG-fuelled Open Hatch Bulk Carrier (OHBC) assuming 2020 delivery to study various technical components and combinations using the ship as a concrete test-bed.

The ECO-Ship 2020 is aiming at energy-efficient, environmental friendliness, and flexible operation and cost-effectiveness. The OHBC concept features a number of innovative solutions, including a wide twin skeg hull, Oshima's seaworthy bow, energy saving devices, air-lubrication system, LNG -fuelled lean-burn four stroke engines, waste heat recovery system, shaft generator/motor (PTO/PTI), and others.

A ship that shall operate beyond 2020 must comply with the strictest emission levels. For this reason the ECO-Ship 2020 has a single fuel system where all engines run on LNG. This solution will satisfy future emission regulations in EU ports, emission controlled areas as well as in open sea trade.

Composite materials have been studied for different application areas. The ship concept is equipped with large pontoon hatch covers made of a combination of glass-reinforced plastic (GRP) sandwich construction. The total weight of hatch cover is less than half of the traditional steel hatch cover weight.

The ECO-Ship has four large capacity electric driven jib cranes for efficient cargo handling operations. The cranes can be used to move the above mentioned light weight hatch covers, thus eliminating the need for complex hydraulic deck system.

The technical solutions featured in the ECO-Ship design offers several advantages compared with the conventional OHBC, both in terms of operational flexibility and environmental performance. As all solutions come at additional cost, the concept has been carefully evaluated for cost-benefit through detailed financial analysis. Calculation show that the concept is financially viable, meaning that the ECO-Ship over the lifetime is expected to be more profitable than the conventional OHBC.

Oshima will conduct more detailed studies of each technology based on this test bed case regarding energy saving, environmentally friendly solutions which contribute to the maritime trade and the world.

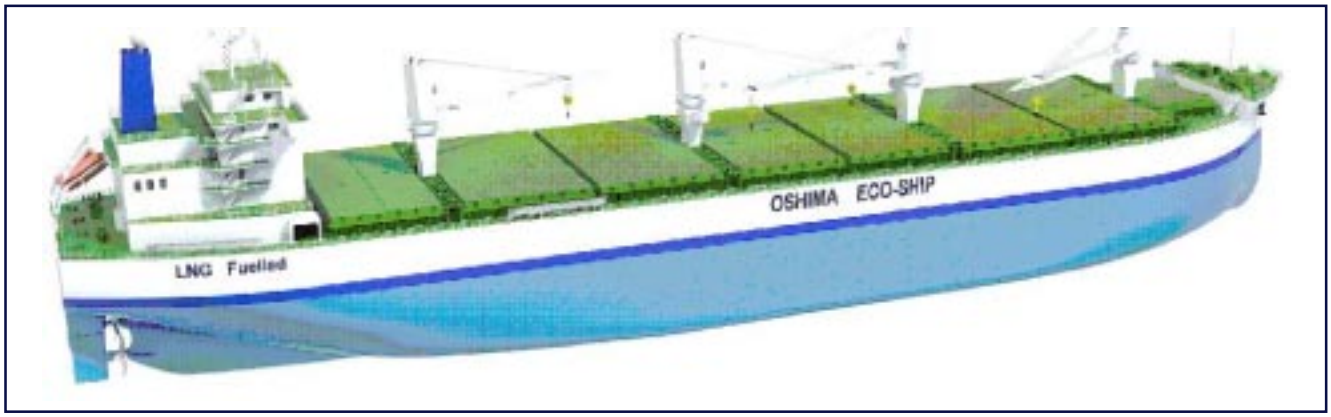
Particulars

Length, overall	200m
Length between perpenddicular	196m
Breadth	36.0m
Depth	19.0m
Design draught	12.0m
Scantling draught	12.8m
Deadweight	62,000t
Cargo hold volume	71,200m^3
Service speed at design draught	14.5kn
No. of cargo hold	8
LNG tank net volume	2,700m3
Endurance	17,000nm

Ship property	**Reference ship**	**Eco-ship 2020**
DWT	1.00	1.29
Design speed	1.00	0.90
Cranes	2 x 70t - Gantry	4 x 75t - Jib
Fuel consumption (ton)	1.00 HFO, 0.12 MGO	0.62 LNG
Energy consumption (kcal/ton nm)	1.00	0.54
CO_2 emission (ton)	1.00	0.45
CO_2 index (CO_2/ton nm)	1.00	0.36
CapEx	Base case	+23 MUSD

New SAJ Chairman appointed

The annual general meeting of the Shipbuilders' Association of Japan (SAJ) held on June 21 elected Mr. Kazuaki Kama as the 33rd Chairman. Mr. Kama is concurrently President and Chief Executive Officer of IHI Corporation.



CACTUS K

Owner: Queen Flower S.A.
Builder: The Hakodate Dock Co., Ltd.
Hull No.: 841
Ship type: Bulk carrier
L (o.a) x B x D x d: 175.53m x 29.40m x 13.70m x 9.640m
DWT/GT: 31,893t/19,817
Main engine: Mitsubishi 6UEC45LSE diesel x 1 unit
Speed, service: 14.4kt
Registration: Panama
Classification: NK
Complement: 24
Completion: June 17, 2011

TTM HARMONY

Owner: New Harmony Maritime S.A.
Builder: IHI Marine United Inc.
Hull No.: 3291
Ship type: Bulk carrier
L(o.a.) x B x D: 190.00m x 32.26m x 18.10m
DWT/GT: 55,873t/31,540
Main engine: DU-WARTSILA 6RT-flex50 diesel x 1 unit
MCR: 8,890kW x 116.0rpm
Classification: NK
Flag: Panama
Completion: May 31, 2011

LOWLANDS SERENITY

Owner: Panamanian owner
Builder: Koyo Dockyard Co., Ltd. (Imabari Shipbuilding Co., Ltd.)
Hull No.: 2342
Ship type: Bulk carrier
L (o.a.) x L (b.p.) x B x D x d: 291.98m x 283.8m x 45.00m x 24.70m x 18.214m
DWT/GT: 181,458t/92,752
Main engine: MAN B&W 6S70MC-C diesel x 1 unit
MCR: 18,660kW x 91.0rpm
Speed, service: 15.15kt
Complement: 25
Classification: NK
Completion: Apr. 8, 2011

OHSHU MARU

Owner: Erica Navigation S.A.
Builder: Namura Shipbuilding Co., Ltd.
Hull No.: 337
Ship type: Bulk carrier
L(o.a.) x B x D x d: 234.88m x 38.00m x 20.00m x 12.80m
DWT/GT: 92,075t/50,927
Main engine: Mitsui MAN B&W 6S60MC-C diesel x 1 unit
Speed, service: abt. 15.00kt
Classification: NK
Complement: 25
Completion: June 8, 2011

KEY INTEGRITY

Owner: James Cook Seatrade B.V.
Builder: Sanoyas Hishino Meisho Corp.
Hull No.: 1289
Ship type: Bulk carrier
L (o.a.) x L (b.p.) x B x D x d: 229.00m x 224.00m x 32.24m x 20.20m x 14.598m
Dwt/GT: 83,375t/44.428
Cargo hold capacity: 96,121m^3 (grain)
Main engine: MAN B&W 6S60MC-C diesel x 1 unit
MCR: 10,740kW
Speed, service: about 14.0kt
Classification: ABS
Completion: June 2, 2011

RICH DUKE II

Owner: Spring Navigation Ltd., S.A.
Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.
Hull No.: 1367
Ship type: Tanker
L (o.a.) x B x D: 228.60m x 42.00m x 21.50m
DWT/GT: 105,000t/56,000
Main engine: Mitsui MAN B&W 6S60MC-C diesel x 1 unit
Speed, service: About 14.8kt
Classification: LR
Completion: Apr. 26, 2011