SEA-Japan

No. 363 Feb. - Mar. 2014

Kawasaki delivers first 82,200m^3 LPG carrier, CRYSTAL SUNRISE

Kawasaki Heavy Industries, Ltd. delivered the LPG carrier, CRYSTAL SUNRISE (HN: 1709), to its owner Kumiai Navigation (Pte) Ltd. on November 15, 2013. The carrier is the first newbuilding of the SEA-ARROW hull form type with a LPG carrying capacity of 82,200m^3.

The tank capacity of this carrier is 82,200m^3 greater than the predecessor of 80,000m^3 class LPG carrier. Kawasaki made it possible to increase the capacity by elongating the cargo tank compartment, and at the same time, the propulsion efficiency is also improved.

The bow of the CRYSTAL SUNRISE is the SEA-ARROW type developed by Kawasaki. This bow type can increase greatly the propulsion performance since it can decrease extremely the wave generation at the bow while navigating.

The main engine is the energy-frugal, super long-stroke two-cycle, and low speed type diesel engine. The Kawasaki rudder bulb with fins (RBS-F) and semi duct with contra-fins (SDS-F) are equipped to increase the propeller efficiency for further energy saving.

The carrier has four independent cargo tanks that allow contraction of the tanks due to very low temperature of liquefied petroleum gas. The cargo tanks are constructed with special steel durable to the low temperature of minus 46°C, and heat insulation of urethane foam is used between cargo tanks and hull structures.

The hull form and equipment of the carrier are designed to comply with the rules of the new Panama Canal, expansion work of which are now under way. Furthermore, a ballast water treatment system is installed on the vessel to contribute to the environmental conservation.

Principal particulars

L (o.a.) x L (b.p) x B x D x d (ext.):	229.90m x 226.00m x 37.20m x 21.00m x 11.20m
DWT/GT:	54,070t/46,885
Cargo tank capacity:	82,394m^3
Main engine:	Kawasaki-MAN B&W 7S60MC-C8.2 diesel x 1 unit
MCR:	13,210kW x 89rpm
Speed, service:	about 17.00kt
Complement:	29
Classification:	NK
Registry:	Singapore
Delivery:	November 15, 2013

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

JMU completes first Panamax bulk carrier of G-Series, NICOLE

Japan Marine United Corporation delivered the NICOLE, a G-Series Panamax bulk carrier, to Augustea Pacific Pte. Ltd. at its Tsu Shipyard on October 8, 2013.

This is the first vessel of Panamax bulk carrier of G-Series, which has succeeded dramatically in decreasing the fuel oil consumption using various and comprehensive measures for energy saving so that GHG (Greenhouse Gas) emission can be decreased overwhelmingly.

This Panamax bulk carrier has larger deadweight and cargo hold capacity suitable for carrying grain, bulk coal, and iron ore in its seven cargo holds. The vessel has been developed with expertise and vast experience of Japan Marine United Corporation. SSD (Super Stream Duct) and Surf-Bulb equipped before and aft its propeller, respectively, to improve the propulsion performance. Furthermore, unique bow shape of Leadge Bow can decrease additional resistance in waves, and the well-refined shape of the superstructure can attain low wind resistance.

Furthermore, in consideration of the environment, the vessel complies with the fuel oil tank protection rules and MARPOL NO_x tier-II for the main engine and adopts a ballast water treatment system.

In view of the safety and maintenance, the vessel is also designed to correspond to CSR (Common Structural Rules) for bulk carriers and PSPC (Performance Standard for Protective Coatings) for ballast water tanks.

Principal Particulars

L (o.a.) x B x D x d:	229.0m x 32.26m x 20.0m x 14.45m
DWT/GT:	81,120t/43,291
Main engine:	WARTSILA 6RT-flex58TD diesel x 1 unit
Speed, service:	14.5kt
Complement:	25
Classification:	NK/BV

MES completes 66,000DWT type bulker, CLIPPER EXCALIBUR

—First new generation Eco-Ship "neo66BC"—

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) completed and delivered a 66,000DWT type bulk carrier CLIPPER EXCALIBUR (HN: 1858) at its Tamano Works to Clio Marine Inc., Liberia, on November 6, 2013. This unprecedented wide beam and shallow draft vessel called "neo66BC" will be the pioneer of the eco-ship as the first ship of MES line up "neo series."

Special Features

1. The vessel has five cargo holds and four cranes for handling cargo and keeps the superior usability of "Mitsui 56."
2. The ship is designed to have enough deadweight more than 66,000 metric tons and capacity more than 82,800 cubic meters for loading various cargoes like coal, ore, grain, as well as lengthy/heavy cargo such as steel pipes and hot coils.
3. Fuel oil consumption is less than that of the conventional Supramax bulk carrier despite its enlargement.
4. As a result of research work of interviews with ship owners and operators, investigations on ports all over the world and present trade patterns, wide beam (over-Panamax) and shallow draft make it possible to have wide flexibility for operations and high transport efficiency.
5. The new hull form makes it possible to keep good performance under rough sea conditions as well as calm sea conditions and shows better maneuverability.
6. The size of hatch opening is the largest for this type of vessel in terms of both length and width.
7. Main Engine, MITSUI-MAN B&W diesel engine 7S50ME-B9.3, complying with MARPOL NO_x restriction (Tier-II) for exhaust gas emissions, gives superior fuel oil consumption over wide range of output.
8. Considering strengthened restriction for SO_x, the ship has low sulfur fuel oil tanks, which are designed for operation in ECA (Emission Control Areas).
9. The vessel is designed in accordance with IACS Common Structural Rules.

Principal Particulars

L (o.a.) x B x D:	199.99m x 36.00m x 18.45m
DWT/GT:	66,721t/38,203
Main engine:	Mitsui-MAN B&W 7S50ME-B9.3 diesel x 1 unit
MCO:	8,470 kW
Speed, service:	about 14.5kt
Complement:	25
Classification:	NK
Registry:	Panama
Delivery:	November 6, 2013

Sasebo delivers first bulker with wider beam and shallow draft

Sasebo Heavy Industries Co., Ltd. delivered the 84,943DWT bulk carrier, Q SUE, to its owner Quintana Shipping Ltd. of Greece. The vessel is the first of the newly developed bulk carrier series by Sasebo, and it features a wider beam and shallower draught than those of the previous vessels built by the company and has better energy-saving performance.

Sasebo started development of the new bulker series in 2010 based on the principal particulars and specifications that were decided by referring to opinions from over 80 companies including shipowners, charterers, and shippers, and the following features could be provided:

The maximum advantage of this series is that it can load greater volume of cargoes in spite of the shallow draught. The vessel is designed with the versatile shallow draught, which can provide a size larger deadweight with the shallower draught than the Panamax size. Namely, the draught is one meter shallower at the full load condition and 84,900t in deadweight is secured, which is 2,900t greater than the current major Panamax bulk carrier of 82,000DWT class. This will be greater advantage for ship operators since the vessel can visit various ports, loading a greater volume of cargoes.

Various measures are taken for energy and work force saving sufficiently. The vessel is designed with Sasebo's energy-frugal type hull form plus using S.S. Fin, an energy-saving fin developed by the company. The rudder is designed to have a special shape combined with bulbs. The main engine uses an electronically controlled type diesel engine for reduction of fuel consumption. The bow is the newly developed vertical edge shape type slightly swelled backward. This will improve the sea-keeping performance under rough sea conditions. As a comprehensive result, the vessel can achieve 15% reduction of the CO_2 emission, or about 20% decrease in the IMO CO_2 emission evaluation standard value.

Remote control units are installed for handling ballast valves, and remote liquid level indicators are provided for the ballast tanks and bunker oil tanks. These measures can alleviate the manual labor for the crew at cargo-handling work. A vacuum toilet system is used in the living quarters to reduce use of clean water. In addition, Requirements for Living Quarters by ILO Maritime Labour Convention (MLC2006) is applied in advance.

Principal particulars

L (o.a.) x B x D x d: 229m x 38.00m x 19.10m x 13.49m (full load)
DWT x GT: 84,943t/47,003
Main engine: Mitsui B&W 6S60ME-C8.2 diesel x 1 unit
Speed, service: 14.0kt
Classification: ABS
Registry: Marshall Islands

MHI completes general cargo/passenger ship, AOGASHIMA MARU

Mitsubishi Heavy Industries, Ltd. (MHI) delivered the AOGASHIMA MARU, a general cargo/passenger ship to the co-owners, Japan Railway Construction, Transport and Technology Agency and Izushoto Kaihatsu K.K. on December 6, 2013.

The vessel was designed and built at the Shimonoseki Shipyard & Machinery Works of MHI, and is now plying an island route between Hachijojima and Aogashima.

The two main engines are electrically controlled diesel engines, and single screw propulsion system is adopted to save fuel oil consumption and reduce CO_2 emission. Two main engines are used as passenger ship to achieve 17 knots, and single engine is used as cargo ship at about 13 knots between Tokyo and Hachijojima.

A bow thruster and flap rudder have been provided for smooth berthing and unberthing. Fin stabilizers are provided to reduce ship rolling during navigation. For the passengers, public space and barrier-free-facilities are arranged on the Deck 3.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 62.00m x 57.50m x 10.80m x 6.60m x 3.75m
GT: 460 (Japanese tonnage)
Machinery
Main engine: Yanmar 6EY26W (EUP) diesel x 2 units
MR: 1,471kW x 750min^{-1}/unit
Propeller: Controllable pitch propeller x 1 unit
Speed, service: 17.0kt
Cargo loading capacity: 38 units of containers
Complement
Passengers: 50 persons
Crew members: 10 persons
Classification: Japanese Government
Registry: Japan (Tokyo)

NAMURA completes 250,000DWT class ore carrier, PARABURDOO

Namura Shipbuilding Co., Ltd. delivered PARABURDOO, a 251,053DWT ore carrier, at its Imari Shipyard & Works on July 24, 2013.

This is the 12th vessel of 250,000DWT type ore carrier series, which Namura calls "WOZMAX," and the principal dimensions of this type vessel satisfy the restrictions of Port Hedland, Port Walcott, and Dampier, which are the three major ports in Western Australia. In addition, mooring equipment is suitably arranged for calling at Ponta da Madeira, Brazil.

The vessel complies with the requirements of the latest amendments of the international regulations at the construction stage.

The Namura flow Control Fin (NCF) and rudder fin, which have been developed by Namura, and high-efficiency propeller are equipped for improving propulsion performance and saving fuel oil.

In the cooling system of the machinery part, the central fresh water cooling system is adopted for easy maintenance. The vessel has large capacity of water ballast pumps for quick operation during cargo loading. IMO PSPC-WBT is applied for corrosion protection of water ballast tanks to increase safety of the vessel.

Principal particulars

L (o.a.) x B x D x d:329.95m x 57.00m x 25.10m x 18.00m
DWT/GT: 251,053t/132,587
Main engine:MAN B&W 7S80MC-C (Mark7) diesel x 1 unit
Speed, service: about 15.0kt
Complement: 25
Classification: NK
Registry: Panama

Sanoyas completes Panamax bulker, IBIS WIND

Sanoyas Shipbuilding Corporation delivered the Panamax bulk carrier, IBIS WIND, built at the Sanoyas Mizushima Shipyard to Sangria Pioneer Five S.A. on November 22, 2013. This vessel is the fifth of the new series of the 83,000DWT Panamax.

The vessel has improved fuel consumption by 10% compared with the existing Sanoyas Panamax bulk carrier, keeping a loading capacity of 83,000t that is the biggest in this category. This will contribute seaborne trade with utmost fuel-saving efficiency.

Propulsion efficiency of the vessel is improved with a low-speed and long-stroke fuel-optimized main engine combined with a high-efficiency propeller and the Sanoyas energy saving device called STF (Sanoyas-Tandem-Fin (patent): max. 6% energy saving) on stern shell. These also contribute to reduction of CO_2 emission.

Various countermeasures are taken for the environmental conservation, which include the main engine complied with NO_x emission Tier II limit for the prevention of air pollution, fuel oil tank protection, and independent holding tanks for accommodation discharges, dirty hold bilge and rainwater on the upper deck.

In addition, dedicated fresh water tanks are provided for storing hold-washing water generated by a large capacity fresh water generator. For improvement of the vessel's maintenance, access trunks provided from the upper deck to the double bottom make crew's movement easier even at laden condition.

Accommodation, applying the new Maritime Labour Convention in advance, makes officers and crew members comfortable in the vessel and safe maneuverability is achieved with organized arrangement and rear visibility in the wheelhouse.

Principal particulars

Owner: Sangria Pioneer Five S.A.
Ship type: Panamax bulk carrier
Hull No.: 1331
L (o.a.) x L (p.p.) x B x D x d: 229.00m x 225.00m x 32.24m x 20.20m x 14.648m
DWT/GT: 82,937t/43,656
Cargo hold capacity:95,892m^3 (grain)
Main engine: MAN B&W 6S60MC-C8.2 diesel x 1 unit
Speed, service: about 14.5kt
MCO: 9,750kW
Classification: NK
Complement: 25
Registry: Panama
Delivery November 22, 2013

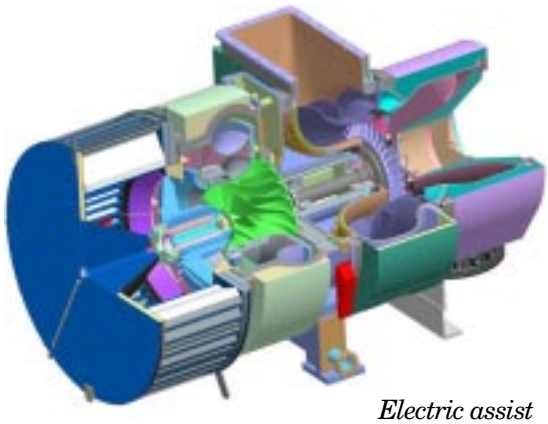
MHI-MME develops efficient electric assist MET turbocharger

Enhancing main engine operational flexibility and working instead of auxiliary blower with cutting electric power consumption by about 30%.

Mitsubishi Heavy Industries Marine Machinery & Engine Co., Ltd. (MHI-MME) developed electric assist MET turbocharger to enhance main engine operational flexibility and work instead of auxiliary blower with lower electric power consumption in 30% compared to existing auxiliary blowers at the Mitsubishi Heavy Industries Nagasaki Shipyard & Machinery Works on October 17. It was developed using a high-speed motor supplied by its partner, Calnetix Technologies (Calnetix), and is the result of collaboration between the two companies.

The electric assist MET turbocharger is a turbocharger that incorporates a compact electric motor limited to power functions that assists the driving of the hybrid turbocharger*. This provides Calnetix optimization of plant efficiency when a ship is operating under slow steaming, improving the fuel combustion efficiency of the main engine, and enabling the same or better performance than an auxiliary blower while consuming little power.

Electric assist can accelerate turbocharger or boost scavenging air pressure at any load continuously and therefore, the ship crew do not have to aware about the load range when auxiliary blower may start and stop automatically which may cause negative impact to the auxiliary blower motor. The unveiling ceremony held at the Nagasaki Shipyard & Machinery Works was attended by around 70 customers from various fields, such as domestic shipping companies, ship owners, and shipyards. Calnetix Co-founder and CEO Vatche Artinian, and MHI-MME President Kazuo Soma also attended. The Company's VTI turbocharger that is variable nozzle turbocharger effective at low load, the first mass-produced model of MET-48MB with an optimal frame size for handysize bulk carriers, and Calnetix's 125kW binary generator (ORC module) for low-temp heat sources were on display at the venue.



Electric assist MET turbocharger structure

"Like the hybrid MET turbocharger, the electric assist MET turbocharger was created through collaboration between companies possessing advanced technologies. By combining the technologies of MHI-MME and Calnetix, we completed a product that provides high energy efficiency and a reduced burden on the environment," Kazuo Soma said, highlighting the fact that the product utilizes the strengths of both companies.

Vatche Artinian made the following comment for a deep appreciation of the electric assist MET turbocharger: "We are working with MHI-MME to develop energy recovery systems that enable shipping companies to reduce operating costs by obtaining more energy from less fuel while remaining compliance with international rules and regulations concerning the marine environment. Like normal MET turbochargers, electric assist MET turbochargers and hybrid MET turbochargers have a long product lifetime and can be installed without making significant changes to engines and offer excellent maintenance access, while being extremely compact devices that enable the best performance to be obtained when installed on a ship."

Electric assist MET turbocharger

MHI-MME and Calnetix have created innovative products that improve the energy efficiency of ships, including low-cost, high-efficiency heat recovery systems, such as MHI-MME's hybrid MET turbochargers, for which Calnetix supplies high-speed generators. The two companies will continue to maintain their good relationship while expanding the framework for working together.

About Mitsubishi Heavy Industries Marine Machinery &Engine

MHI-MME is a wholly-owned subsidiary of Mitsubishi Heavy Industries. It was launched on October 1, 2013, assuming the marine machinery and engine development, design, sales, after-service and licensing operations of Mitsubishi Heavy Industries. MHI-MME has broad lineup of marine machinery and engines unparalleled worldwide. For further information, please visit www.mhi-mme.com.

About Calnetix Technologies

Calnetix Technologies, LLC ("Calnetix"), headquartered in Cerritos, CA, is focused on Innovation That Drives Industries. The company specializes in high-performance, high-speed motor generators and best-in-class advanced magnetic bearings and control systems. For more information, please visit www.calnetix.com.

CORONA ROYAL

Owner: ISC1631 Shipping S.A.
Builder: Imabari Shipbuilding Co., Ltd.
Ship type: Bulk carrier
L (o.a.) x B x D: 229.98m x 38.00m x 19.90m
DWT/GT: 88,887/49,762
Main engine: Mitsui MAN B&W 2 cycle diesel x 1 unit
Speed, service: about 15.00kt
Classification: NK
Completion: October 2, 2013

EARTH OCEAN

Owner: MI-DAS LINE S.A.
Builder: Oshima Shipbuilding Co., Ltd.
Hull No.: 10648
Ship type: Bulk carrier
L (o.a.) x B x D x d (ext.): 182.98m x 32.26m x 17.15m x 12.12m
DWT/GT: 50,409t/29182
Main engine: Mitsui MAN B&W 6S50MC-C diesel x 1 unit
Speed, service: 14.5kt
Classification: NK
Completion: October 23, 2013
Registry: Panama

ANSAC ENTERPRISE

Owner: SE Bulker Corporation
Builder: Kanda Shipbuilding Co., Ltd.
Hull No.: 538
Ship type: Open hatch cargo ship
L (o.a.) x B x D x d (ext.): 181.10m x 28.40m x 14.25m x 10.00m
DWT/GT: 32,706t/20,992
Main engine: 6UEC45LSE diesel x 1 unit
Speed, service: 14.15kt
Classification: NK
Completion: October 15, 2013
Registry: Panama

ANDES QUEEN

Owner: Aries Marine S.A.
Builder: Shin Kurushima Dockyard Co., Ltd.
Hull No.: 5782
Ship type: Bulk carrier
L (o.a.) x B x D x d (ext.): 182.93m x 32.26m x 17.60m x 12.42m
DWT/GT: 52,330t/30,220
Main engine: Mitsui MAN B&W 6S50MC-C8.1 diesel x 1 unit
Speed, service: about 14.5kt
Classification: NK
Completion: December 5, 2013
Registry: Panama

ROBIN WIND

Owner: Cassiopeia Marine S.A.
Builder: Shin Kurushima Toyohashi Shipbuilding Co., Ltd.
Hull No.: 5767
Ship type: Bulk carrier
L (o.a.) x B x D x d (ext.): 224.98m x 32.26m x 19.85m x 14.38m
DWT/GT: 78,230t/41,960
Main engine: Mitsui MAN B&W 6S60MC-C7.1 diesel x 1 unit
Speed, service: about 14.5kt
Classification: NK
Completion: September 26, 20013
Registry: Panama

UNITED WORLD

Owner: United Ocean Hull No. 1533 S.A.
Builder: Tsuneishi Shipbuilding Co., Ltd.
Hull No.: 1533
Ship type: Bulk carrier
L (o.a.) x B x D x d (ext.): 228.99m x 32.26m x 20.05m x 14.429m
DWT/GT: 82,026t/43,005
Main engine: Mitsui MAN B&W 6S6MC-C (Mark 7) diesel x 1 unit
Speed, service: 14.5kt
Classification: NK
Completion: October 25, 2013
Registry: Panama