

New bulk carrier Oshima JAPANAMAX debuts

--Access to all grain berths in Japan--

Oshima Shipbuilding Co., Ltd. (Oshima) recently developed the 82,000DWT type Panamax-class bulk carrier, named JAPANAMAX, as a world de-facto standard vessel for the future.

The JAPANAMAX has the maximum level deadweight of Panamax class under the overall-length limitation of 225m, which allows the ship to enter all grain berths in Japan, where some of the grain ports have a strict overall-length limitation of 225m.

The vessel also has several new and special technical features profitable for ship owners and operators. The design has been developed with the following four concepts: (1) improved cargo loading/unloading efficiency, (2) environment protection, (3) reduced fuel oil consumption and less maintenance work, and (4) improved safety for ship operation.

The deadweight is increased by about 2,700MT at the same draft compared with the existing 77,000DWT type Panamax bulk carriers. Adoption of the hybrid configuration with double-side structure for Nos. 1 and No. 7 cargo holds increases efficiency of cargo unloading as well as hold cleaning work. The configuration also improves structural safety by eliminating hold frame corrosion, damage

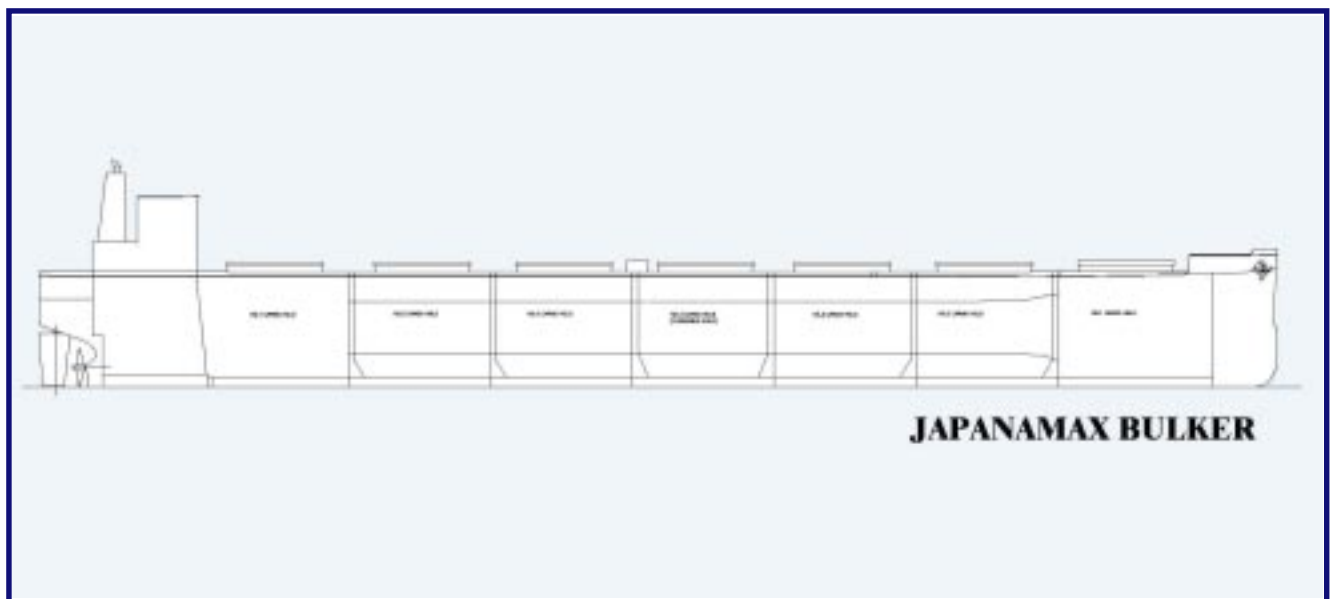
and reducing flooding risk drastically. 15.88m wide hatch openings are provided for Nos. 2 through 7 cargo holds.

Pure epoxy paint is applied to the outside shell, weather deck, and cargo holds. Tar-free modified epoxy paint is coated for the water ballast tanks instead of tar epoxy paint considering worker and crew health and easy inspection with light color. CO₂ gas and other noxious gases exhausted from ships are decreased by taking adequate measures for the items below.

The long stroke and large bore engine (five cylinders with 600mm bore) is installed to perform low fuel oil consumption and less maintenance work. The Oshima WAFIN (Wake Acceleration Fin) is equipped for improvement of the propulsive performance and more economical transportation.

The Seaworthy Bow of excellent seaworthiness is adopted for improving speed performance in rough weather conditions. The Oshima High-Lift Rudder composed of the Schilling rudder and rotary vane type steering gear is equipped to improve the ship's maneuverability and course keeping ability, which was developed in cooperation with Japan Hamworthy.

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USC completes 200,000DWT bulk carrier, *Azul Challenge*

The Ariake Shipyard of Universal Shipbuilding Corporation (USC) delivered the 200,000DWT type bulk carrier, *Azul Challenge* in June 2004.

The *Azul Challenge* is a Capesize bulk carrier, the most efficient ship type capable of visiting the major discharging ports located in the Japanese inland sea. The vessel has a capacity

of over 200,000DWT at the scantling draft and is the third vessel in the series of this ship type built by USC.

The bow above the waterline of the vessel is the Ax-Bow that can decrease wave resistance at sea. The cargo hold section consists of nine holds and nine hatch covers, highly suitable for loading and unloading operations.

The main engine is a long stroke, low speed, 2-stroke turbocharged diesel engine, which greatly reduces energy consumption together with the effect of the sophisticated hull form and the Surf-Bulb structure provided after the propeller.

The Ariake Shipyard has not constructed Capesize bulk carriers in recent years, but has been enjoying a worldwide reputation mainly for VLCC construction. With the restart of large bulk carrier construction, the shipyard has set up a product-mix building system for tankers and bulk carriers, etc.

Principal particulars:

L (o.a.) x B x D x d: abt. 300.00m x 50.00m x 24.10m x 17.88m
DWT/GT: 203,277t/101,933t
Main engine: Hitachi Zosen MAN B&W 6S70MC Mk6 diesel x 1 unit
Speed, service: 14.7kts
Classification: NK



Kawasaki delivers *Bungo Spirit* to Panamanian owner

Kawasaki Shipbuilding Corporation delivered the 50,000DWT bulk carrier, *Bungo Spirit* (HN: 1551), to N. C. N. Corporation of Panama at the Kobe Works on Sept. 14.

The bulk carrier is a flush decker with the forecastle and has five cargo holds, which allow loading of various cargoes of grain, coal, ore, steel products, etc.

For cargo handling efficiency, the

bulk carrier has four 30t deck cranes on the ship centerline between cargo hatches, permitting the ship to enter a port without cargo handling gear on the wharf.

The main engine is the Kawasaki MAN B&W 6S50MC-C diesel engine known as a light, compact, and high-output engine.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 189.80m x 181.00m x 32.26m x 16.90m x 11.90m
DWT/GT: 50,000t/28,200t
Main engine: Kawasaki MAN B&W 6S50MC-C diesel x 1 unit
MCR: 8,090kW x 127rpm
Classification: NK
Complement: 25

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Principal Particulars

L (o.a.) x L (b.p.) x B x D x d: 225.00m x 221.50m x 32.26m x 19.99m x 14.44m
DWT: approx. 82,000MT
GT: 43,600
Main engine: MAN B&W 5S60MC-C diesel x 1 unit
Cargo-hold capacity: approx. 96,000m³
MCR: 12,750ps x 88.0rpm
Speed, service: approx. 14.5kt
Classification: NK
Complement: 25



MHI completes advanced roll on roll off type vehicle carrier *Utopia Ace* for MOL

Mitsubishi Heavy Industries, Ltd. (MHI) has completed construction of a roll on roll off type vehicle carrier, *Utopia Ace*, with a car carrying capacity of approximately 6,400 units in passenger car equivalents for Mitsui O.S.K. Lines, Ltd. (MOL) at the Kobe Shipyard & Machinery Works on July 30, 2004.

The *Utopia Ace* is the most advanced car carrier having the features of the streamlined super structure to reduce wind pressure, energy-saving and marine environment-concerned measures, etc.

The new car carrier adopts a very slim design for the hull below the water line. This streamlined design for the structures above the upper deck reduces the wind pressure more than ever.

The double bottom construction is employed for the bunker oil tanks, which will reduce the risk of oil leakage from the tanks in the case of stranding. (Patent pending by MHI and MOL).



The lube oil injection method into the main engine cylinders is changed into the jetting type. As a result, the consumption of lube oil decreases, reducing particle substances in the exhaust gas.

Every car deck can accommodate high-roof vehicles. The jumping slopes are introduced to directly connect upper decks with lower decks to facilitate car-handling work.

Principal particulars (*Utopia Ace*)

L (pp) x B x D: 194.31m x 32.26m x 34.52m

Gross Tonnage: 60,175t

Car carrying capacity: approximately 6,400 passenger cars (RT Type)

Main engine: Mitsubishi-UE 7UEC60LSII diesel x 1 unit

Speed, service: 20.65kt

Complement: 30 persons

Classification: Nippon Kaiji Kyokai NS* (Vehicle Carrier), MNS* (MO)

Completion: July 30, 2004

Sanoyas completes Panamax bulk carrier, *Medi Vancouver*

Sanoyas Hishino Meisho Corp. has delivered the 75,772mt Panamax bulk carrier, *Medi Vancouver* (HN: 1219), to Hexad Shipping S. A. at the Mizushima Works and Shipyard.

This Panamax bulk carrier, which was developed by Sanoyas as an extreme beam size for passing through

the Panama Canal, is the 48th of the series, or the 22nd of the 75,500mt type.

The *Medi Vancouver* has seven cargo holds with topside tanks and a hopper bottom, and the living quarters and engine room is arranged aft. This arrangement allows efficient

loading and unloading of bulk cargoes. The hatch covers are the side rolling type driven by an electro-hydraulic motor and chains.

The main engine is a very low-speed, long stroke, and 2-cycle diesel engine. The highly efficient and large diameter propeller assists in reducing fuel consumption.

Principal particulars

L (o.a.) x L (b.p.) x b x D x d: 225.00m x 217.00m x 32.26m x 19.30m x 13.994m (ext.)

DWT/GT: 75,772mt/38,877t

Cargo-hold capacity: 89,201m³ (grain)

Main engine: MAN B&W 7S50MC-C diesel x 1 unit

MCR: 12,200ps

Speed, service: about 14.5kt

Classification: NK

Complement: 25



Naikai completes 45,900DWT product tanker, *High Power*

Naikai Zosen Corporation has completed construction of the 45,900DWT product tanker, *High Power* (HN: 684), for Golden Product Tankers S. A. of Panama at the Setoda Works.

The *High Power* is a Panamax size tanker with double hull construction for the bottom and shipsides, complying with the MARPOL requirements. The tanker can transport petroleum products (light and heavy oils), crude oil, and palm oil.

The total cargo tank capacity is about 54,000m³ and is separated into 14 tanks (including two slop tanks). The segregation system allows simultaneous loading of four types (or four groups) of cargoes (25% load of cargo tank volume for each type). Four electric motor driven screw pumps with a capacity of 800m³/h are used for unloading of cargoes.

The slim hull design is adopted to increase navigation speed. The use of a special rudder has improved ship

maneuverability in a narrow port. The raised weather deck at the bow minimizes swashing, improving course-keeping stability. All these improvements contribute to energy saving in this high-speed medium range product tanker. Ship operation efficiency has thus been increased.

The main engine is the next generation electronic control diesel engine of the Hitachi Zosen B&W 6S50ME-C type. Fuel injection, exhaust timing, and other controls are optimized by the electronic control system, which is expected to reduce fuel consumption and prolong engine life. The noise and vibration from the engine room is greatly reduced by completely separating the living quarters and the engine room. Amenity en-

vironment for the crew is provided.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 179.90m x 172.00m x 32.20m x 19.25m x 11.65m

DWT/GT: 46,866t/28,245t

Cargo-tank capacity: 54,911.3m³

Main engine: Hitachi Zosen B&W 6S50ME-C diesel x 1 unit

MCR: 9,480kW x 127min⁻¹

NCR: 8,530kW x 123min⁻¹

Speed, service: 15.7kt

Classification: NK

Completion: Sept. 30, 2004

Complement: 25



MES develops "e-GICS" system for monitoring engine operation

—Via-web technical information for marine main engines—

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) has developed the electronic Global Internet Customer Support (e-GICS), an on-line system using a communications satellite to provide the various services required for operation of marine main engines after ships enter service. The system will be marketed in this autumn for the operators of ships with MES MAN B&W diesel engines. The users of MES engines can instantaneously obtain necessary information on performance diagnosis, open inspection

data of principal parts, maintenance diagnosis, technical expertise, technical Q&A, parts procurement, etc.

This integrated engine information management system operates in combination with the INMARSAT and Internet systems. With this system, information on the main engines separately owned by the ship, ship operation company, ship management company, and MES can be unified for further improved ship operation.

MES has a 40% market share of Japanese marine main engine produc-

tion as a leading engine builder. Therefore, MES can analyze the engine performance based on the diagnosis and provide adequate advice for maintenance based on engine data accumulated in shop tests and results from operating engines.

The operator of the engine on board a ship can easily access the e-GICS system of the MES web server. With the entry of engine data on the e-GICS screen, diagnostic services can be obtained from specialists for engine performance and maintenance of principal parts and directive technical information to prevent engine problems. MES believes that the e-GICS system will play a prominent role in engine diagnosis and maintenance with ship operation with a small crew, or mixed crew, fewer engine specialists on board, and outsourcing of engine operation work. The system will boost safe and reliable ship operation and help reduce ship operation costs.



Onomichi completes 47,000DWT product tanker

Onomichi Dockyard Co., Ltd. has completed construction of the 47,000DWT product tanker, *Iver Eagle* (HN: 501), for Eagle One S. A. of Panama. The ship is the 47,000DWT class standardized type developed by Onomichi for carrying petroleum products.



The tanker employs double hull construction for the ship sides and bottom, complying with the latest requirements of MARPOL. Cargo oil tanks use the segregation system to load four types of cargoes simultaneously. Efficient cargo loading and unloading is achieved using the self-stripping system.

Special measures are taken against leakage of hazardous gases from the cargo tanks. In the event of leakage into the double hull space, anti-explosion

equipment will work to minimize the risk of explosion.

Unattended engine operation is possible due to employment of automatic operation systems. The main engine uses the low-speed and long-stroke diesel for a large diameter propeller rotation.

Principal Particulars

L (o.a.) x L (b.p.) x B x D x d: 182.50m x 172.00m x 32.20m x 18.10m x 12.60m

DWT/GT: 47,474mt/26,902t

Cargo hold capacity: 53,703.7m³

Main engine: MAN B&W 6S5OMC (Mark-VI) diesel x 1 unit

Speed (Max) 16.11kt

Classification: NK

MES develops ship motion compensator for underwater observation use winch

Mitsui Engineering & Shipbuilding Co., Ltd. (MES), The Tsurumi Seiki Co., Ltd., and Daiichi-Denki Co., Ltd. have jointly developed a new type of underwater observation use winch with a ship motion (mainly heaving) compensator (patent pending). The underwater observation device suspended from the winch can be maintained at a fixed vertical position due to the automatically controlled ship motion compensating function of the winch.

The new automatically controlled winch is mounted with the DDVC (Direct Drive Volume Control) system. The system is the next-generation electro-hydraulic system applicable to distributed driving sources. The steel and press-processing industries have already introduced this technology to production lines.

The winch drum rotation is controlled accurately and constantly via the DDVC system. The control is achieved by computing ship motion data outputted from motion measurement equipment on board the ship. The dynamic effect of heave of the ship is reduced to one-tenth for the underwater observation equipment with the self-control function of the winch. This

makes the heave compensator winch system compact and keeps the cost low.

Up to now, most observation use winches installed on ships have required a hydraulic unit, pipes to pump out the high-pressure working fluid, and the winch drum directly coupled with a hydraulic motor. Moreover, it has been difficult to automatically maintain the position of the observation sensor (CTD, etc) at the fixed depth and constant speed of hoisting up and down an observation sensor. No automatic control system has been available for such a winch drum. If automatic control is required, various facilities including a special crane are necessary, which reduce the free working space on the upper deck. Costs thus increase.

Akishima Laboratories (MITSUI ZOSSEN) Inc., a MES subsidiary company, has conducted verification tests on the new winch system at its water tank and real sea test in Sagami Bay. The tests showed that the system functioned correctly. Good performance is expected in actual use. With the new winch, high quality observation data can be obtained, and observation work will be achieved safely

with a small crew.

The DDVC system is based on the electro-hydraulic method. No mechanical driving device (ball screws, deceleration clutches, etc.) is used. Driving is achieved by the stepless control of an actuator that works with direct fluid volume regulation. This system is applicable to ordinary hydraulic units installed on ships. The combined system with the actuator is useful for ship automation and energy saving. It also decreases the use of pipes for hydraulic systems.

For the reference, the DDVC system has already been used for ship's rudder and a level-controlled platform against ship motion, showing good performance. These are mounted on the training ship, *Shioji Maru*, and the research ship, *Yayoi*, both belonging to Tokyo University of Marine Science and Technology.



NYK Atlas

Owner: Glorious River Line S.A.
Builder: IHI Marine United Inc.
Hull No.: 3169
Ship type: Container carrier
L (o.a.) x B x D x d: 299.90m x 40.00m x 23.90m x 14.00m
DWT/GT: 81,171t/75,519t
Main engine: DU-Sulzer 12RTA96C diesel x 1 unit
Output: 61,350kW x 97.7rpm
Speed, service: 25.0kt
Classification: NK
Completion: July 21, 2004

Sea Victory

Owner: Pedregal Maritime S. A.
Shipbuilder: Koyo Dockyard Co., Ltd
Hull No.: 2157
Ship type: Bulk carrier
L (o.a.) x B x D x d: 288.93m x 45.00m x 24.70m x 18.151m
DWT/GT: 184,805t/90,091t
Main engine: Mitsui MAN B&W 6S70MC-C diesel x 1 unit
MCR: 18,630kW
Speed, service: 15.35kt
Classification: NK
Completion: Aug. 9, 2004

*Anthemis*

Owner: Blue Waters Shipping Ltd.
Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.
Hull No.: 1306
Ship type: Bulk carrier
L (o.a.) x L (p.p.) x B x D x d: 225.00m x 217.30m x 32.26m x 19.30m x 14.00m
DWT/GT: 76,150t/39,818t
Main engine: MAN B&W 7S50MC-C diesel x 1 unit
Output: MCR 9,210KW x 109.3rpm
Speed, service: abt. 14.5kt
Classification: ABS
Completion: July 16, 2004

Nord Strait

Owner: Stiringaster Line Inc.
Builder: Shin Kurushima Dockyard Co., Ltd.
Hull No.: 5213
Ship type: Product carrier
L (o.a.) x B x D x d: 179.88m x 32.2m x 18.7m x 12.0m
DWT/GT: 45,934t/28,059t
Main engine: MAN B&W 6S50MC-C diesel x 1 unit
Speed, service: 15.1kt
Classification: NK
Completion: July 28, 2004

Olympic Future

Owner: Onassis Group
Builder: Namura Shipbuilding Co., Ltd.
Hull No.: 243
Ship type: Tanker
L (o.a.) x L (p.p.) x B x D x d: 273.97m x 263.00m x 47.00m x 23.30m x 17.126m
DWT/GT: 155,039t/80,591t
Main engine: Mitsubishi 7UEC68LSE diesel x 1 unit
Output: 18,630kW x 91.0rpm
Classification: ABS
Completion: Aug. 9, 2004

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