

Naikai completes eco-friendly PCTC, JUPITER SPIRIT



Naikai Zosen Corporation completed construction of the JUPITER SPIRIT, a 45,961GT pure car and truck carrier (PCTC), for Nissan Motor Car Carrier Co., Ltd. at the Setoda Works on June 30, 2011. The vessel has a car carrying capacity of 5,000 passenger cars.

The carrier is designed to accommodate various vehicles such as passenger cars, trucks, buses, and heavy-duty vehicles. To achieve such mixed loading, 13 car decks are provided in total, and two of these decks are the liftable type to permit accommodating larger vehicles.

Loading of vehicles are attained by roll-on and roll-off through shore-ramp doors located aft and amidship on the starboard side. The hold ramps are provided for drive through access to the accommodation bay.

Energy saving of the carrier is achieved by a new hull form with superior ship speed improved by water tank tests, employment of an energy-saving device called 'STEP' (Spray TEaring Plate), adoption of highly efficient NHV (Non Hub Vortex) propeller, and use of bulb-type fluorescent lamps for the inboard lighting in place of incandescent lamps.

The STEP is an energy-saving device of a pair of plates attached to both side of the bow (see photo). The STEP is effective to reduce wave resistance working on the hull. Due to this, the fuel consumption can be improved without losing the ship speed with the wave resistance. It is expected that the resistance will be decreased by 18% (comparison with the same type vessel) and the fuel consump-

tion will be decreased by several percent.

The environmental preservation is achieved by protecting fuel oil tanks with double hull construction and installing tanks for low sulfur fuel oil.

For safe ship operation management, the movie camera is mounted at the every corner of the carrier to monitor a fire, invasion by suspicious persons, and inboard status. Moreover, the fleet monitoring system is introduced to carry out ship operation management related to the ship navigation together with collection of engine operation data from the shore base.

The carrier has acquired the Class NK's appraisal of the 10 Mode Performance Index for Ships. The STEP has been applied to the hull form that has been appraised by the Performance Index.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d; 183.00m x 170.00m x 30.20m x 28.80m x 8.45m

Car carrying capacity: 5,000 units (Car size: 4.125m (L) x 1.550m (W) x 1.420m (H))

Main engine: Hitachi-MAN B&W 6S60MC-C diesel x 1 unit

GT: 45,961

MCR: 12,210kW x 105min⁻¹

Speed, service: Abt. 19.0kt

Classification: NK

Completion: June 30, 2011



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MHI Completes development of new-generation LNG carrier of "Sayaendo" series

--Continuous cover for MOSS-type spherical tanks--

Mitsubishi Heavy Industries, Ltd. (MHI) has completed development of the new-generation LNG carrier marking an evolutionary advance from Moss-type LNG carriers. It features a peapod-shaped continuous cover for the Moss spherical tanks that is integrated with the ship's hull, in lieu of the conventional hemispherical cover.

The continuous cover over the tanks improves aerodynamics by substantially reducing wind pressure. Improved aerodynamics contributes to reduced fuel consumption during navigation. At the same time, the continuous cover minimizes exposure of support structures and equipment, and it also facilitates reinforcement of overall strength to be effective in resisting ice impact load.

The new-generation MOSS-Type LNG carrier measures 288 meters in length, 49.0m in width, 26.0m in depth and 11.5m in draft and has cargo tank total capacity of 155,000m³ using four

Moss-type tanks. It is also applicable to the New Panamax category.

Compared with the conventional Moss-type LNG carrier of the same size, it has the capacity to transport 8,000m³ more LNG by employing stretched Moss tanks and its steel hull structure is about 5% lighter in weight. The depth of the ship has also been reduced by one meter, enabling better compatibility with major terminals in Japan and other countries in view of cargo manifold and gangway landing arrangement.

For its main power plant, the new-generation MOSS-Type LNG adopts MHI's "Ultra Steam Turbine Plant"(UST), a new turbine plant



which achieves higher thermal efficiency through effective use of thermal energy by reheating steam. Together with downsizing, weight reduction and hull lines improvement, the new ship achieves a substantial 20% reduction in fuel consumption compared to conventional ships.

MHI looks to its new-generation LNG carrier as a sure leader in tomorrow's shipping industry, and the company aims to conduct its marketing activities aggressively.

Imabari completes 95,709DWT bulk carrier, DOUBLE PRESTIGE

Imabari Shipbuilding Co., Ltd. completed construction of DOUBLE PRESTIGE (HN: S-1555), a 95,709DWT bulk carrier, and delivered the vessel at the Marugame Headquarters on Jul. 26, 2011.

The Vessel is a single screw diesel

engine driven ocean-going bulk carrier suitable for carrying coal, ore, and grain cargoes.

The vessel is provided with the side rolling type hatch covers, which are operated by electric motor and a chain drive system. The sizes of hatches are

designed widely for convenience of cargo-handling operation.

The vessel has an energy saving device installed at the leading edge of rudder. This contributes to environment-friendly and economical operation of the vessel.

Principal particulars

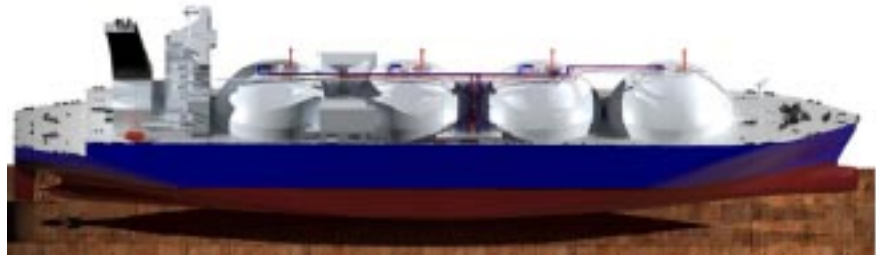
Length, o.a.:	234.98 m
Length, b.p.:	227.00 m
Breadth, mld.:	38.00 m
Depth, mld.:	19.90 m
Draught, mld.:	14.45 m
DWT/GT:	95,709t/50,617
Cargo hold capacity:	109,477m ³
Main engine:	Mitsui-MAN B&W 6S60MC-C (Mark 7) diesel x 1 unit
MCR:	12,950kW x 101.0rpm
Speed, service:	About 15.0kt
Complement:	24
Classification:	NK
Delivery:	Jul. 26, 2011



MES LNG carrier "Double Eco MAX" with gas firing slow speed diesel engine —30% reduction in fuel cost plus low CO₂ emission—

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) has completed the development of a new type LNG Carrier termed "Double Eco MAX" achieving 30% reduction in fuel cost and CO₂ emission by adoption of a gas firing slow speed diesel engine ME-GI for the propulsion system. MES is now proposing a product lineup of LNG carrier for 147,000m³ type, 155,000m³ type and 180,000m³ type to the customers.

The most distinctive feature of the Double Eco MAX is that it is installed with ME-GI engine which achieves 30% reduction of fuel cost and CO₂ emission. Although this engine is a highly heat-efficient 2-cycle slow speed diesel engine, it enables gas-firing, oil firing as well as gas-oil mixed firing. This realizes the direct propeller connecting propulsion system of binary fuel burning to achieve maximum reduction of fuel cost and CO₂ emission. That is "Ecology MAX."



At the same time, this propulsion system with the binary fuel burning enables the optimum selection of the fuel out of the fluctuating fuel prices of the time, creating managerial economies in the ship operation. That is "Economy MAX."

The commercialization of gas-firing slow speed 2-cycle engine has long been considered very difficult. However, MES has completed the development of such engine based upon its unique technology of GIDE (Gas Injection Diesel Engine), which is the first generating plant by gas-firing slow speed diesel engine in the world and has the demonstration test run

record of over 20,000 hours in its Chiba Works.

The ME-GI engine is the highly electronic controlled type while inheriting the characteristics of gas-firing GIDE in order to enhance the environmental performance and efficiency in all operational areas.

Risk assessment was fully carried out by MAN DIESEL & TURBO, DNV and ABS (Classification Societies) to prove the thorough safety the system.

While the increasing demand for natural gas is expected, MES will expand the winning of orders of new type LNG carrier Double Eco MAX in the market.

Kawasaki delivers 180,000 DWT bulk carrier, FRONTIER NEIGE

Kawasaki Heavy Industries, Ltd. has delivered the FRONTIER NEIGE (HN: 1637) bulk carrier to Southern Pacific Holding Corporation at its Sakaide Shipyard. The carrier is the eighth state-of-the-art bulk carrier with 180,000DWT developed by Kawasaki. The Frontier Neige is a 292-meter-long bulk carrier boasting one of the largest cargo capacities among

vessels that can enter France's Port of Dunkirk.

The vessel is fully compliant with the new bulk carrier hull strength rules (IACS Common Structural Rules) for enhanced safety.

The vessel employs the latest technology to achieve maximum fuel economy, including an energy-saving main diesel engine, highly efficient propellers, as well as the Kawasaki semi-duct system with contra fins (SDS-F) and rudder bulb with fins (RBS-F), which all contribute to the vessel's enhanced propulsion performance.

The Frontier Neige employs double-hull fuel oil tanks and electrical deck machinery to prevent marine pollution.

The bulk carrier's anti-corrosion coatings, complying with the new performance standards for protective coatings (PSPC) for ballast tanks, ensure paint quality that is better than ever.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d:	292.00m x 288.00m x 45.00m x 24.70m x 18.20m
DWT/GT:	182,737t/93,288
Cargo hold capacity:	203,226m ³
Main engine: Kawasaki MAN B&W	6S70MC-C7 diesel x 1 unit
MCR:	17,780kW x 87rpm
Speed, service:	About 15.3kt
Complement:	28
Classification:	NK
Registry:	Panama



Sanoyas completes 120,000DWT handy cape bulker, NORD CETUS

Sanoyas Hishino Meisho Corp. completed the 120,000DWT class handy cape bulk carrier, NORD CETUS, for Southern Route Maritime, S.A. at the Mizushima Works and Shipyard on July 19, 2011.

The vessel is the 4th of the 120,000DWT type series. This is a sophisticated new vessel achieving large deadweight with shallow draft, anticipating the trade expansion for coal and iron ore in the future market. The vessel with wide beam and shallow draft will clear the restriction of some ports for large bulk carriers and has been named "Handy Cape" because it is the most flexible in Capesize bulk carriers.

The vessel with a wide beam and shallow draft will clear the restrictions at some ports that do not permit the large bulk carriers to enter the ports. Therefore, it has been named Handy Cape because it is the most flexible in Capesize bulk carriers.

The improved propulsion efficiency is achieved by employing a low-speed and long-stroke main engine combined with a high-efficiency propeller and SANoyas energy saving device called STF (Sanoyas-Tandem-Fin (patent): max. 6% energy saving) on

stern shell, which also contributes to the reduction of CO₂ emission.

This vessel complies with Common Structural Rules (CSR) by International Association of Classification Societies. Considering protection of the environment, various countermeasures such as fuel oil tanks of double hull structures, holding tank for accommodation discharges and dirty hold bilge and independent bilge segregation system for engine room, are incorporated.

For increased cargo-handling efficiency, cargo hatches are widened as much as possible and the same width is applied to the No.1 through No.7 hatches. Dedicated fresh water tanks are provided to store hold-washing water generated by a large-capacity fresh water generator. In addition, special fuel oil heating system is adopted for fuel oil storage tanks to avoid cargo damage by overheating and reduce the steam consumption.

Wooden furniture in the living



quarters makes officers and crews comfortable in the vessel, and safe maneuverability is achieved with organized arrangement and rear visibility in the wheelhouse.

Principal particulars

Owner Southern Route Maritime, S.A.

L (o.a.) x L (b.p.) x B x D x d:
245.00m x 238.00m x 43.00m x
21.65m x 15.404m

DWT/GT: 119,473t/64,647

Cargo hold capacity: 135,717m³
(grain)

Main engine: MAN B&W 6S60MC-C
diesel x 1 unit

MCR: 13,560 kW

Speed, service: about 14.6kt

Complement: 25

Classification: NK

Delivery: July 19, 2011

Universal completes Panamax bulk carrier, NORD VENUS

Universal Shipbuilding Corporation delivered the 80,000DWT bulk carrier, NORD VENUS, at the Mizushima shipyard on June 29, 2011.

The vessel is the 15th vessel of the newly designed Panamax type bulk carrier and has the largest deadweight

and cargo hold capacity within the restriction of the length overall for the Panamax type bulk carrier, which has been made possible using various independent technology.

The bow shape, called the Ledge-Bow, reduces the added wave resistance not only at

the laden condition but also the ballast condition.

The newly-developed Ledge-Bow has superior performance at the sea compared to the Ax-Bow, which is employed by more

than 90 vessels.

The vessel demonstrates high propulsion efficiency and energy saving, since it is equipped with the Surf-Bulb (Rudder fin with bulb) after the propeller and SSD (Super Stream Duct) in front of the propeller.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 225.00m
x 222.00m x 32.26m x 20.00m x
14.38m

DWT/GT: 80,655t/42,711

Cargo hold capacity: 95,980m³

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

Sea speed: 14.6kt

Complement: 25

Classification: NK

Completion: June 29, 2011



MES to build two neo Supramax 66BCs

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) has agreed with the first class shipowner to build two neo Supramax 66BCs, 66,000DWT bulk carriers of the next generation newly developed as low fuel consumption/eco-friendly ship.

Keeping the superior usability of MES best selling 56,000DWT type Handymax bulk carrier ("Mitsui 56") which achieved over 170 contracts, this new and larger type bulk carrier is expected to establish a new segment in bulk carrier market. Development of the ship's design was preceded by hearings from various owners and operators and investigations on more than 600 ports all over the world. This ship is designed to have overPanamax beam (36m) and shallow draft in consideration of prevailing trade patterns and the expansion of Panama Canal in 2014.

Despite its larger deadweight and cargo capacity than Mitsui 56, neo Supermax 66BC achieves even less fuel consumption by adopting newly developed hull form and other energy

saving equipment.

At IMO MEPC62 held in July 2011, implementation of new energy efficiency design index (EEDI) and actual restrictions on fuel consumption in line therewith have been adopted. Neo Supramax 66BC's fuel consumption is far lower than the restriction level based on EEDI and is expected to benefit its users in long term under the future marine environment protection restrictions.

The MES achievement is a result of high valuation of neo Supramax 66BC's concept, superior energy efficiency and operational flexibility from wide beam, shallow draft design. The two ships are to be chartered by European major operator.

Features can be outlined as follows: The ship is equipped with deck cranes and keeps the superior usability of Mitsui 56. The ship is designed to have wide beam, shallow draft and deadweight of 66,000 metric tons, while keeping sufficient capacity for loading various bulk cargoes including coal, iron ore, wheat, barley, soy

beans, etc. The ship can also accommodate lengthy/heavy cargoes such as steel pipe and hot coil. Hatch opening of the ship is optimized to meet the existing cargo handling facilities at various ports.

Principal particulars

Length overall:	About 200m
Beam (molded):	36.00m
Depth (molded):	18.45m
Deadweight:	About 66,000mt
Speed, service:	14.5kt (NSR)



Onomichi Dockyard completes new product carrier

—First vessel of Mark IV series—

Onomichi Dockyard Co., Ltd. delivered the 50,000DWT-type product and chemical carrier, HIMALAYA (HN: 562), to Noble Sea Shipping Company Limited on July 28, 2011. The vessel is the first of the newly-developed product and chemical carrier called Mark IV series, and one more same type vessel will be delivered to the same owner on September.

The Mark IV type employs the corrugate structure for the bulkheads.

Every cargo tank has an independent-type cargo pump to allow loading various types of products and chemicals including IMO type-II and III.

New design concept for the Mark IV series has been focused on the following points: 'Operation performance' to ensure the superior operability of various machinery and equipment based on previous shipbuilding achievements and cargo-handling data, 'Safety performance' to be secured with increased operation efficiency, 'Maintenance performance' to contribute to cost reduction in overall maintenance, and 'Eco-friendly performance' by arranging machinery and equipment that are friendly to the marine

environment and providing the crew with amenity in ship life.

The shape of the stem is the Onomichi Straight Bow (OSB). This original stem design can reduce the resistance at the rough sea condition. Onomichi parallel fins (OPF) are employed to improve the water flow around the stern. This allows controlling the water flow to the propeller and results in the decrease in fuel consumption.

Principal particulars

L (o.a.) x B x D x d:	182.5m x 32.20m x 19.05m x 13.10m
DWT/GT:	50,000t/29,500
Main engine:	Mitsui MAN B&W 6S50MC-C (Mark 7) x 1 unit
MCR:	9,480 kW x 127min ⁻¹ (rpm)
Speed, max. trial:	15.7kt
Classification:	ABS
Registration:	Cyprus (Limassol)



GLOBAL PEACE

Owner: Global Breeze S. A.
 Builder: The Hakodate Dock Co., Ltd.
 Hull No.: 842
 Ship type: Bulk carrier
 L (o.a.) x B x D x d: 175.50m x 29.40m
 x 13.70m x 9.62m
 DWT/GT: 31,742t/19,801
 Main engine: Mitsubishi 6UEC45LSE
 diesel x 1 unit
 Speed service: 14.4kt
 Classification: NK
 Registration: Singapore
 Complements: 24
 Completion: Aug. 4, 2011

**DST QUEEN**

Owner: Bright Islands Corporation
 Builder: IHI Marine United Inc.
 Hull No.: 3319
 Ship type: Bulk carrier
 L (o.a.) x B x D: 190.00m x 32.26m x
 18.10m
 DWT/GT: 55,848t/31,540
 Main engine: DU-WARTSILA 6RT-
 flex50 x 1 unit
 MCR: 8,890kW x 116.0rpm
 Classification: NK
 Completion: Sept. 7, 2011
 Flag: Panama

**SAIYO**

Owner: Estrella Navigation, S.A.
 Builder: Namura Shipbuilding Co.,
 Ltd.
 Hull No.: 336
 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: 92,014t/50,927
 Main engine: Mitsui MAN B&W
 6S60MC-C diesel x 1 unit
 Speed, service: About 15.00kt
 Classification: NK
 Complement: 25
 Completion: July 1, 2011

**THOR FORTUNE**

Owner: Thor Fortune Shipping Pte.
 Ltd.
 Builder: Oshima Shipbuilding Co.,
 Ltd.
 Hull No.: 10608
 Ship type: Bulk carrier
 L (o.a.) x B x D x d (ext.): 189.99m x
 32.26m x 17.62m x 12.444m
 DWT/GT: 54,123t/31,487
 Main engine: Kawasaki MAN B&W
 6S50MC-C (Mk7) diesel x 1 unit
 Speed, service: 14.50kt
 Classification: NK
 Registration: Singapore
 Completion: June 15, 2011

**PARAMACONI**

Owner: Panavenflot Corp.
 Builder: Sumitomo Heavy Industries
 Marine & Engineering Co., Ltd.
 Hull No.: 1370
 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: June 21, 2011

**ATLANTIC CLOVER**

Owner: Sun Advance Shipping S.A.
 Builder: Shin Kurushima Dockyard
 Co., Ltd.
 Hull No.: S-5688
 Ship type: Bulk carrier
 L (o.a.) x B x D x d (ext.): 179.99m x
 28.20m x 14.30m x 10.10m
 DWT/GT: 33,671t/21,192
 Main engine: 6UEC45LSE diesel x 1
 unit
 Speed, service: 14.3kt
 Classification: NK
 Registration: Panama
 Completion: Mar. 10, 2011

