



## MHI completes 83,000m<sup>3</sup> type LPG carrier AQUAMARINE PROGRESS



Mitsubishi Heavy Industries, Ltd. (MHI) completed construction of AQUAMARINE PROGRESS (HN:2249), an LPG carrier with a tank capacity of 83,278m<sup>3</sup>, and delivered the vessel to Sherwood Overseas S.A. at the Nagasaki Shipyard & Machinery Works on Jan. 15, 2010.

The vessel is the seventh 83,000 m<sup>3</sup> LPGC built by MHI and was developed based on the MHI 78,000 m<sup>3</sup> LPGC series of 36 delivered vessels.

The vessel is designed as a straight LPG carrier to carry propane and butane. The sophisticated hull form, optimum design of the propeller, and Mitsubishi-Reaction Fin achieve high propulsive performance and less vibration.

Main dimensions and cargo equipment were designed by considering compatibility with worldwide LPG termi-

nals. A booster cargo pump and a cargo heater/vaporizer are equipped to cope with various shore facilities.

### Principal Particulars

Length (o.a.):	230.0m
Length (b.p.):	219.0m
Breadth:	36.6m
Depth:	21.65m
Summer draft:	11.628m
Gross tonnage:	47,985
Cargo tank capacity:	83,278m <sup>3</sup>
Main engine:	Mitsubishi 7UEC60LSII diesel x 1 unit
Output:	13,700kW x 104rpm
Speed, service:	16.7kt
Classification:	NK



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## Kawasaki delivers LPG carrier, HISUI, to Asuka Marine Corporation

Kawasaki Shipbuilding Corporation has completed the LPG carrier, HISUI (HN: 1624), for Asuka Marine Corporation of Japan. The carrier is the 45th LPG carrier, or sixth of the same class, built by Kawasaki.

The carrier is designed with the new bow type called SEA-ARROW developed by the company which can

minimize the wave-making resistance at the bow during navigation, increasing the propulsion performance greatly.

Four independent LPG tanks are installed in each hull compartment. This tank system allows cryogenic contraction of the cargo tanks separately from the hull. The cargo tanks employ special steel resistant to LPG cryogenic temperatures down to minus 46 degree C. The tanks are insulated with urethane foam to prevent heat penetration.

The main engine is the super

long-stroke, two-cycle, and low-speed diesel engine for energy saving. The Kawasaki rudder bulb with fins (RBS-F) is used. These combined effects contribute to reduction of energy consumption.

### Principal particulars

Length, o.a.:	226.00m
Length, b.p.:	222.00m
Breadth, mld.:	37.20m
Depth, mld.:	21.00m
Draught, mld.:	11.20m at full load
DWT/GT:	53,012t/45,815
Cargo tank capacity:	80,199m <sup>3</sup>
Main engine:	Kawasaki-MAN B&W 7S60MC-C diesel x 1 unit
MCR:	14,000kW x 94rpm
Speed, service:	abt. 17.0kt
Complement:	30
Classification:	NK
Completion:	Jan. 29, 2010



## Mitsui's 56 series bulker, YASA KAPTAN ERBIL, completed

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) delivered the 56,000DWT type bulk carrier YASA KAPTAN ERBIL (HN: 1774) at its Tamano Works on Feb. 3, 2010 to YASA DENIZCILIK SANAYI VE TICARET A.S., Turkey.

The vessel is a Handymax type bulk carrier with a huge cargo hold capacity of over 70,000m<sup>3</sup>. This bulk carrier series is known as Mitsui's 56 worldwide. More than 150 vessels of the series have been ordered from MES.

The vessel is designed in accordance with the IACS Common Structural Rules for increased structural safety and operational flexibility. The vessel is designed to have good manageable size of 56,000DWT at the summer draft, length and draft for accessibility to world main ports, and low fuel oil consumption based on good propulsive performance.

The vessel has five cargo holds and four cranes for handling cargo. To load various types of cargoes, the vessel has adequate strength of the tank top of cargo holds and is suitable for efficient cargo handling. Maximized hatch

openings easily accommodate lengthy cargoes, and strengthened structures allow loading of heavy products.

The main engine is the MITSUI-MAN B&W 6S50MC-C diesel engine, which complies with MARPOL NO<sub>x</sub> restriction for exhaust gas. The power margin can provide a high degree of flexibility and achieve the lowest fuel oil consumption by optimum matching at normal service output. Generator engines also comply with MARPOL NO<sub>x</sub> restriction for exhaust gas.

Ballast water can be changed during navigation for protection of the

marine environment.

### Principal Particulars

Length, o.a.:	189.99m
Length, b.p.:	182.00m
Breadth, mld.:	32.25m
Depth, mld.:	18.10m
DWT/GT:	56,169t/31,756
Main engine:	Mitsui-MAN B&W 6S50MC-C diesel x 1 unit
MCR:	9,070kW x 125.0rpm
Speed, service:	abt. 14.5kt
Complement:	23
Classification:	NK
Delivery:	Feb. 3, 2010



## Sanoyas completes Panamax bulk carrier, GLOBAL STAR

Sanoyas Hishino Meisho Corp. completed construction of the Panamax bulk carrier, GLOBAL STAR (HN: 1281), for Southern Route Maritime, S.A. at the Mizushima Works and Shipyard on Jan. 20, 2010.

The vessel is the 12th of the series of the Sanoyas newly developed 83,000DWT type Panamax bulk carriers, featuring the largest deadweight and cargo hold capacity in the world for the Panamax bulk carrier.

For improvement of propulsion efficiency, the vessel is equipped with a

low-speed and long-stroke main engine combined with a high-efficiency propeller. Adoption of the Sanoyas energy saving device called the "STF" (Sanoyas-Tandem-Fin (patent); max. 6% energy saving possible) on the stern shell also contributes to reduction of CO<sub>2</sub> emissions.

Cargo hatches are widened as much as possible to facilitate cargo handling. Dedicated fresh water tanks are provided for storing hold washing water produced by a large-capacity fresh water generator. In addition,

special fuel oil heating system is applied for fuel oil storage tanks to avoid cargo damage by over-heating and to reduce steam consumption.

For protection of the environment, various countermeasures are incorporated, which include fuel oil tanks with double hull structures, light color and tar-free coating for ballast tanks, holding tank for accommodation discharges and dirty hold bilges, and an independent bilge segregation system for the engine room.

Principal particulars

L (o.a.) x L (p.p.) x B x D x d: 229.00m x 223.00m x 32.24m x 20.20m x 14.555m

DWT/GT: 83,601t/44,146

Cargo hold capacity (grain): 96,152m<sup>3</sup>

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

MCR: 10,740kW

Speed, service: abt. 14.0kt

Complement: 25

Classification: NK

Delivery: Jan. 20, 2010



## Imabari delivers 154,900m<sup>3</sup> LNG carrier to Los Halillos Shipping

Imabari Shipbuilding Co., Ltd. has delivered the 154,900m<sup>3</sup> LNG carrier, GDF SUEZ POINT FORTIN (HN:2263), to the owner, Los Halillos Shipping Co., S.A., at the Koyo Dockyard.

The GDF SUEZ POINT FORTIN is the third LNG carrier of the series adopting the GTT M-III Membrane system and the conventional steam turbine propulsion system.

The hull construction and equipment comply with the Lloyd's Register's (LR) Rules and Regulations with effective notations such as ShipRight (SDA, FDA plus, CM). To increase the cargo tank capacity, The No. 1 cargo tank has a trapezoidal section in the horizontal direction. Air-draft of 128 feet and various equipment for cargo handling, mooring, communication, access, and provisions handling allow entry of major LNG terminals.

Service speed of about 20.15 knots is faster than that of the conventional LNG carrier of the same type, and provides flexible ship operation.

Principal particulars;

Length, o.a.: 289.93m

Length, b.p.: 276.00m

Breadth, mld.: 44.70m

Depth, mld.: 26.00m

Design draft, mld.: 12.05m

DWT/GT: 79,592t/101,129

Cargo tank capacity: 154,914m<sup>3</sup>

Speed, service: about 20.15kt

Main engine: Kawasaki UA400 steam turbine x 1 unit

MCR: 29,420kW x 81rpm

Classification: LR



## Universal completes 207,000DWT bulk carrier, FIRST IBIS

Universal Shipbuilding Corporation delivered FIRST IBIS, a 207,000 DWT Bulk Carrier, to Star Bulk Carrier Co., S.A. at the Tsu Shipyard on Jan. 29, 2010. The vessel is designed to carry bulk coal and iron ore between Asia and Australia more efficiently and to have flexibility for port restrictions.

This is the 13th vessel of a new design series of Newcastle-max that is the most efficient for the shallow draft and has a large cargo hold capacity.

The vessel has double side skin construction for the cargo holds to reduce flooding risk due to ship side damage and improve cargo handling. In spite of having cargo holds bound by a double side skin, the cargo capacity is equivalent to that of the previous single skinned Newcastle-max series.

The vessel employs high propulsion efficiency and energy saving devices, SSD (Super Stream Duct) and Surf-Bulb (Rudder Fin with Bulb), in front of and behind the propeller. In addition, the bow above the waterline is

shaped as the Ax-Bow that can decrease added wave resistance at sea.

Deck machinery such as windlasses/mooring winches and hatch covers are driven by electric-motor system for oil leak prevention on deck.

Principal particulars  
L (o.a.) x L (b.p.) x B x D x d: 299.7m x 290.2m x 50m x 25.0m x 18.2m

DWT/GT: 208,038t/106,367  
Loading Capacity: 218,790m<sup>3</sup>  
Main engine: MAN B&W 6S70MC-C diesel x 1 unit  
Speed: 16.3kt  
Complement: 25  
Classification: NK  
Completion: Jan. 29, 2010



## Shin Kurushima completes 45,902DWT product tanker

Shin Kurushima Dockyard Co., Ltd. completed the 45,902DWT product tanker, EAGLE EXPRESS (HN: 5555), for delivery to Venus Ocean Navigation S.A. at its Onishi Works. The carrier is designed to transport petroleum products such as fuel oil, gasoline, kerosene, naphtha, etc. The ship hull form is based on the performance verified with scale model tests

to achieve alleviation of noise and vibration and increase propulsion performance.

The tanker has 14 cargo tanks and two slop tanks. This arrangement allows efficient cargo loading. A residue tank is separately from these tanks to prevent the marine pollution. The cargo tanks are constructed with corrugated bulkheads and bulkhead

stools for the lower sections, and the shell side uses double hull construction. The deck longitudinals and transverses are installed on the upper deck side, thus eliminating any projections such as members inside the cargo tanks. This facilitates tank cleaning and maintenance.

The tanker has four electric-drive cargo pumps, the revolving speed of which is controlled by inverter, or pole change, to increase cargo handling efficiency.

Principal particulars  
L (o.a.) x B x D x d: 179.88m x 32.20m x 18.70m x 12.102m  
DWT/GT: 45,902t/28,051  
Main engine: Mitsubishi 6UEC60LA diesel x 1 unit  
Classification: NK NS\* (Tanker, Oils-Flashpoint on and below 60°C) (ESP) MNS\*, MC  
Completion: Jan. 29, 2010



## Oshima's high-performance ship propeller becoming popular

—Six propellers already at sea, 60 units to be attached to newbuildings—

A new design of ship propeller has become popular, which was marketed by Oshima Shipbuilding Co., Ltd. in 2007 under the name of MAITA (Most Advanced Innovated Technological Appliance) Propeller. At Oshima Shipbuilding, R&D had continued for four years since 2004 to develop the propeller design system for improvement of ship propulsion performance.

The propeller performance influences the ship propulsion, and consequently reduces engine fuel consumption. Oshima has studied how to make the propeller performance higher by applying a propeller shape design method developed by its own technology. Moreover, the estimation of pro-

PELLER performance has further been upgraded by applying the airfoil theory called SQCM developed by Kyushu University to the ship propeller.

In 2007, Oshima employed the first MAITA Propeller for a bulk carrier built by the company. Oshima said that the first MAITA propeller demonstrated the designed performance at the sea trial. The follow-up study after commencement of the transport service also showed the same good results. Consequently, the company decided to employ the MAITA propeller as the standard specification for vessels built at the Oshima Shipyard, which is now contributing to increased

ship propulsion performance.

Six vessels have employed the new propeller, and 60 vessels under construction or to be built will use the MAITA Propellers. The company will continue to improve energy saving by scrutinizing the results obtained from the propeller design and tests.



## JSEA participates in Posidonia 2010

The 22nd Posidonia 2010 (The International Shipping Exhibition) will take place at the Hellenikon Exhibition Centre in Helleniko five days from June 7 through 11. This event is organized by the Posidonia Exhibitions SA and sponsored by the Greek Ministry of Mercantile Marine, Union of Greek Shipowners, etc., and organizations related to the maritime industry.

The Japan Ship Exporters' Association (JSEA) consisting of 12 Japanese shipbuilders will participate in the exhibition with the financial support of The Nippon Foundation and

in cooperation with The Shipbuilders' Association of Japan. JSEA will use a 240.16m<sup>2</sup> exhibition area where Japanese shipbuilding technology will be presented. Particular ship hull forms and newly developed ship designs will be introduced with the liquid crystal display (LCD) system and other displays.

Shipbuilders:

IHI Marine United Inc.

Imabari Shipbuilding Co., Ltd.

Kawasaki Shipbuilding Corporation

Mitsubishi Heavy Industries, Ltd.

Mitsui Engineering & Shipbuilding Co., Ltd.

Namura Shipbuilding Co., Ltd.

Oshima Shipbuilding Co., Ltd.

Sanoyas Hishino Meisho Corporation

Sasebo Heavy Industries Co., Ltd.

Shin Kurushima Dockyard Co., Ltd.

Sumitomo Heavy Industries Marine & Engineering Co., Ltd.

Universal Shipbuilding Corporation

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**SETAGAWA**

Owner: Kawasaki Kisen Kaisha (K Line)  
 Builder: IHI Marine United Inc.  
 Hull No.: 3247  
 Ship type: VLCC  
 Flag: Kobe, Japan  
 L (o.a.) x B x D: 333.00m x 60.00m x 29.00m  
 DWT/GT: 299,998t/159,936  
 Main engine: DU-WARTSILA 7RTA84TB diesel x 1 unit  
 MCR: 27,160kW x 74.0rpm  
 Classification: NK  
 Completion: Dec. 3, 2009

**GREAT PERSEUS**

Owner: Sunbright Shipping S.A.  
 Builder: Namura Shipbuilding Co., Ltd.  
 Hull No.: 308  
 Ship Type: Bulk carrier  
 L (o.a.) x B x D x d: 288.97m x 45.00m x 24.40m x 17.93m  
 DWT/GT: 176,912t/89,603  
 Main engine: Mitsui MAN-B&W 6S70MC (Mk 6) diesel x 1 unit  
 Speed, service: 15.00kt  
 Classification: NK  
 Complement: 25  
 Completion: Jan. 15, 2010

**ARICA BRIDGE**

Owner: GARLAND MARITIME S.A.  
 Builder: Naikai Zosen Corporation  
 Ship type: Container carrier  
 L (o.a.) x L (b.p.) x B x D x d: 199.93m x 188.00m x 32.20m x 16.60m x 9.80m  
 DWT/GT: 32,997t/27,213  
 Container carrying capacity: 2,450TEUs  
 Main engine: MAN B&W 7S70MC-C diesel x 1 unit  
 MCR: 21,735kW x 91min<sup>-1</sup>  
 Speed, service: abt. 22.2kt  
 Classification: NK  
 Complement 23  
 Completion Jan. 29, 2010

**PLEIADES LEADER**

Owner: FI Strawberry Leasing Ltd.  
 Builder: Shinkurushima Toyohashi Shipbuilding Co., Ltd.  
 Hull No.: 3626  
 Ship type: Pure car carrier  
 L (o.a.) x B x D x d (mld.): 199.94m x 32.26m x 37.41m x 10.30m  
 DWT/GT: 21,462t/62,994  
 Main engine: KOBE DIESEL-MITSUBISHI 8UEC 60LSII diesel x 1 unit  
 Speed, service: 20.0kt  
 Classification: NKNS\* (Vehicles Carrier, Equipped for Carriage of Dangerous Goods) MNS\* M0  
 Completion: Nov.13, 2009

**ETERNAL BLISS**

Builder: Tsuneishi Holdings Corporation  
 Hull No.: 1447  
 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: 82,071mt / 43,024  
 Main engine: KAWASAKI MAN-B&W 6S60MC-C (Mk 7) diesel x 1 unit  
 Speed, service: 14.5kt  
 Registration: Singapore  
 Classification: NK  
 Completion: Jan. 15, 2010

**FIVE STARS FUJIAN**

Owner: Five Stars Fujian Shipping Company Limited  
 Builder: Sasebo Heavy Industries Co., Ltd.  
 Hull No.: S-764  
 Ship type: Bulk carrier  
 L (o.a.) x B x D x d (ext.): 292.00m x 45.00m x 24.70m x 18.175m  
 DWT/GT: 181,383MT / 93,385  
 Main engine: Mitsui MAN B&W 6S70MC-C diesel x 1 unit  
 Speed, service: 15.30kt  
 Registration: Hong Kong  
 Classification: ABS  
 Completion: Nov. 12, 2009

