

## MHISB completes 83,000m<sup>3</sup> type LPG carrier, ASTOMOS VENUS



Mitsubishi Heavy Industries Shipbuilding Co., Ltd. (MHISB) completed construction of the ASTOMOS VENUS (HN: 2315), an LPG carrier with a tank capacity of 83,309m<sup>3</sup>, and delivered the vessel to Astomos Energy Corporation at Nagasaki on March 31, 2016. The ASTOMOS VENUS is the fifth vessel of the third generation LPGC series, developed based on the first and second generation LPGC series that have delivery records of 49 vessels so far in all. Main features of the new LPGC have been designed with the concept of environmentally-friendly, easy and flexible operation and maintenance, and high reliability.

Higher propulsive performance with less vibration compared with the conventional LPGC was achieved by the advanced hull form, optimum design of the propeller and the Mitsubishi Reaction Fin. Furthermore, the main engine complies with the NO<sub>x</sub> limitation Tier II and low sulfur fuel can be used to comply with the SO<sub>x</sub> limitation of SECA (SO<sub>x</sub> Emission Control Area). A Ballast Water Treatment System is installed onboard.

Various improvements are incorporated for efficient and flexible cargo operation such as higher unloading rate by auxiliary cargo pumps, elimination of loading restriction,

cargo manifold arrangement allowing to adaptation to various terminals, etc. In addition, unbalanced cargo capacity is allocated to each cargo tank to achieve flexible cargo transportation, and necessary fittings are arranged to pass through the Panama Canal New Locks.

Higher reliability was achieved by the IMO IGC-code type B independent tank newly developed based on feedback from long experience, design expertise accumulated through the construction of MOSS type LNG carriers and the state-of-the-art structural analysis system MHI-DILAM (Direct Loading Analysis Method).

### Principal particulars

Length (o.a.):	230.0 m
Length (b.p.):	219.0 m
Breadth:	36.6 m
Depth:	21.65 m
Summer draft:	11.575 m
Gross tonnage:	47,963
Cargo tank capacity:	83,309m <sup>3</sup>
Main engine: Mitsubishi UE-7UEC60LSII diesel x 1 unit	
Output:	13,000kW x 100min <sup>-1</sup>
Service speed:	17.0 kt
Classification:	NK



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## JAPAN SHIP EXPORTERS' ASSOCIATION

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## JMU completes Dunkirkmax bulk carrier of G-Series, CHEVRIER

Japan Marine United Corporation (JMU) delivered the CHEVRIER, a 182,000DWT bulk carrier, at its Tsu Shipyard on January 13, 2016. This is the 12th vessel of the "G-Series" of Dunkirkmax bulk carriers, called G182BC. JMU previously built the G-Series Newcastlemax and Panamax bulk carriers, and this G182BC is the third ship type of the G-Series.

The G182BC type has succeeded in drastically decreasing fuel oil consumption with various and comprehensive measures for energy-saving, and the Energy Efficiency Design Index (EEDI) is much improved. The G182BC type was developed with the expertise and vast experience of JMU.

The SSD (Super Stream Duct) and Surf-Bulb (Rudder Fin with Bulb) are equipped fore and aft of the propeller, respectively, to much improve the pro-

pulsion performance. Furthermore, the unique bow shape of the LEADGE Bow can decrease additional resistance in waves, and the well-refined shape of the superstructure has low wind resistance. The features of low level EEDI, application of the ballast water treatment system and compliance with the MARPOL NO<sub>x</sub> Tier-II make the vessel environmentally friendly.

### Principal particulars

L (o.a.) x B x D x d: 292.00m x 45.00m x 24.55m x 18.18m



DWT/GT:	182,625t/93,297
Main engine:	MAN B&W 7S65ME-C8.2 diesel x 1 unit
Speed:	15.05kt
Complement:	27
Classification:	NK

## Sanoyas completes 4,300,000cft woodchip carrier, C.S. BRIGHT

Sanoyas Shipbuilding Corporation delivered the woodchip carrier C. S. BRIGHT (HN: 1318) at the Sanoyas Mizushima Shipyard on January 21, 2016.

This vessel is a 4.30 million cubic feet (approximately 121,000m<sup>3</sup>) type woodchip carrier with wide beam and shallow draft developed by Sanoyas, with one of the largest cargo hold capacities in the world. This vessel is the fifth to apply the fuel oil tank protection regulation and Performance Standard for Protective Coatings (PSPC) of the International Maritime

Organization.

The vessel is the flush deck type with aft engine room and accommodation house. Cargo space is divided into six holds, each structure designed and arranged for efficient loading and unloading of woodchip. This type of vessel has greater depth than the conventional bulk carrier of the same deadweight class due to its design to carry low-density cargo like woodchip.

For improvement of propulsion efficiency, the vessel is equipped with a low-speed and long-stroke main engine combined with a high efficiency propeller and the Sanoyas energy saving device STF (Sanoyas-Tandem-Fin (patent); max. 6% energy saving) on the stern shell, which also contributes to the reduction of CO<sub>2</sub> emissions.

One 975t/h chip unloader,

three deck cranes and four hoppers are installed between the cargo hatches. The main belt conveyor is positioned fore-and-aft over the main deck, and a shuttle conveyor is equipped on the bow to unload woodchip from the ship to a shore facility. Cargo handling equipment is designed for quick and safe unloading operations. Cargo hatch covers are the folding type driven by the electrohydraulic system.

### Principal particulars

Owner:	CARIBSTAR SHIPPING S.A.
L (o.a.) x B (mld.) x D (mld.):	209.99m x 37.00m x 22.85m
DWT/GT:	63,291t/49,718
Cargo hold capacity:	121,605m <sup>3</sup> (4,294,466cft) (grain)
Speed, service:	about 14.6kt (at c.s.o. with 15% sea margin)
Main engine:	MAN B&W 6S50MC-C8 diesel x 1 unit
MCO:	9,480kW
Complement:	28
Registry:	Panama
Classification:	NK
Delivery:	January 21, 2016





## Kawasaki conducts naming ceremony of LNG carrier

Kawasaki Heavy Industries, Ltd. (Kawasaki) held the naming ceremony of a 164,700m<sup>3</sup> LNG carrier (HN: 1713) at its Sakaide Shipyard on December 1, 2015, which was named BISHU MARU by Mr. Satoru Katsuno, president of Chubu Electric Power Co., Inc., the charterer of the LNG carrier. The shipowner is Kawasaki Kisen Kaisha, Ltd. ("K" Line).

BISHU MARU is a Moss-type LNG carrier which has almost the same hull size with that of the existing 147,000m<sup>3</sup> type LNG carriers, enabling her to enjoy good ship-shore compatibility with major LNG terminals throughout the world, while making it possible to pass through the New Panama Canal presently under construction.

The cargo tank capacity of BISHU MARU is 17,700m<sup>3</sup> more than that of the existing 147,000m<sup>3</sup> type LNG carriers.



The ship features a fully optimized hull structure for reduced weight, as well as a hull shape that is optimized for the maximum propulsive performance. Furthermore, Kawasaki Advanced Reheat Turbine Plant, which is proven to substantially improve transport efficiency, is adopted as the main engine.

### Principal particulars

L x B:	Abt. 293m x 48.9m
Main Engine:	Kawasaki Advanced Reheat Turbine Plant (Kawasaki URA Plant)
Tank Capacity:	abt. 164,700m <sup>3</sup>
Normal Speed:	abt. 19.5kt
Boil-Off Rate:	abt. 0.08%/day

## NAMURA completes 115,000DWT type Aframax tanker, DIAMOND FAITH

Namura Shipbuilding Co., Ltd. delivered the DIAMOND FAITH, a 114,737DWT crude oil carrier built at its Imari Shipyard & Works, to Diamond Tanker Pte. Ltd. on January 22, 2016. This vessel is the third Aframax tanker built by Namura in compliance with the Common Structural Rule, and the vessel also conforms to the latest requirements of international regulations such as IMO PSPC-COT and PSPC-WBT for corrosion protection of the cargo oil and ballast water tanks to increase the safety of the vessel.

Energy saving devices independently developed by Namura, the

Namura flow Control Fin (NCF) and Rudder Fin attached to the stern, and low-friction type antifouling paint applied to the outside shell improve the propulsion performance, and an electronically controlled main engine contributes to reduction of fuel oil consumption.

For environmental safety, the vessel is equipped with the main engine and generator engine compliant with Annex VI of MARPOL 73/78 regulations (Tier II) to reduce NO<sub>x</sub> emissions.

The cargo system of the vessel has three large-capacity cargo oil pumps, which facilitate loading and unloading three grades of oil products, and

an automatic unloading system increases the efficiency of cargo unloading.

The ballast water treatment system to control the quality of ballast water is equipped for protection of marine environment prior to the enforcement of the International Convention for the Control and Management of Ships' Ballast Water and Sediments.

Reduction of fuel costs and GHG emissions as well as improvement of operational efficiency have been achieved with a ship performance and monitoring system incorporating actual sea conditions.

### Principal particulars

L (o.a.) x B (mld) x D (mld) x d (mld):	249.97m x 44.00m x 21.20m x 14.80m
DWT/GT:	114,737t/63,538
Main engine:	MAN B&W 6G60ME-C9.2 diesel x 1 unit
Speed, service:	about 14.45kt
Complement:	30 + 6 (workers)
Registry:	Singapore
Classification:	NK



## Oshima completes 90,000DWT type bulk carrier, SHIN SEKIYO

Oshima Shipbuilding Co., Ltd. delivered the 90,000DWT type bulk carrier, SHIN SEKIYO, to Kyoei Tanker Co., Ltd. on January 13, 2016. This vessel was built to succeed the SEKIYO, and was designed to carry not only coal but also ore and grain cargoes.

This vessel has five cargo holds provided with wide hatch covers for improving cargo handling efficiency. Two large-capacity ballast pumps are installed to shorten the time required for deballasting work.

The optimized hull dimensions of the vessel allow entry to all Japanese major ports, and a wider beam design is suitable for mass transportation of bulk cargoes, which is also applicable to the limitations of the new Panama Canal.

This vessel is designed with environment-friendly measures such as double hull structures for all fuel oil tanks and diesel oil tanks to prevent oil spillage in case of damage. In addition, collecting tanks are provided for storing wash-water used for the holds



and deck.

Reduced fuel consumption is accomplished by adoption of the Advanced Flipper-Fins, PBCF, low friction paint and electronically-controlled engine. The Seaworthy Bow developed by Oshima is also adopted for improving speed performance under rough weather conditions.

### Principal particulars

L (o.a.) x L (b.p.) x B x D x d (sum-

mer): 235.00m x 230.00m x 43.00m  
x 18.55m x 13.044m

DWT/GT: 90,781t/50,794

Loading capacity: 109,210m<sup>3</sup>

Main engine: Mitsubishi

7UEC60LSE-ECO-1 diesel x 1 unit

MSR: 10,335kW at 80.0rpm

Speed, service: 14.3kt

Classification: NK

Complement: January 13, 2016

## Naikai completes 19,000DWT oil product tanker, KIRANA SAPTA

Naikai Zosen Corporation completed construction of the KIRANA SAPTA, a 19,000DWT white and black product tanker, for Sirius Shipholding Pte. Ltd. at the Setoda Works on January 21, 2016. The product tanker is now servicing South Asian routes for transporting petroleum products (light and heavy oil products).

The tanker is a wide beam and shallow draught type with the navigation draught limited to 7.13m. The cargo tanks including slop tanks are segregated into 12 sections. These compartments are protected by double side-shells and bottom to prevent outflow of petroleum products to avoid marine contamination. Fuel oil tanks are also designed with double-skin

structures to prevent fuel oil outflow.

This product tanker with wide beam employs a newly developed hull form and a large rudder for improved propulsion efficiency and maneuverability. Even in a shallow port, the

vessel has superb course-keeping and turning performance. The tanker can maintain even fore-aft balance by shifting fuel oil between the tanks located at the bow and stern.

Total volume of the cargo tanks is 23,900m<sup>3</sup>, and loading and unloading are achieved by three electric screw pumps with a capacity of 600m<sup>3</sup>/h.

### Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 160.00m  
x 152.00m x 27.90m x 11.20m x  
7.13m

DWT/GT: 19,000t/13,222

Main engine: Hitachi-MAN B&W  
7S35MC7.1 diesel x 1 unit

MCR: 4,900kW x 170min<sup>-1</sup>

NCR: 4,165kW x 161min<sup>-1</sup>

Speed, service: About 13.5kt

Complement: 25

Registry: Singapore

Classification: NK

Completion: January 21, 2018





## MES establishes new department to support FPSO chartering business

Mitsui Engineering and Shipbuilding Co., Ltd. (MES) has announced the establishment of the FPSO Business Section within the Ocean Business Promotion Department. Effective February 1, the new section will handle all operations and management related to MES participation in FPSO chartering-related businesses.

MES is implementing its Mid-Term Business Plan 2014 (MBP14) for the realization of a balanced business portfolio that ensures sustainable growth and solid profit stability. One of the core basic policies of MBP14 is the expansion of business engagement and related-service businesses. As part of this strategy, MES acquired

shares of Cernambi Norte MV26 B.V., an FPSO chartering business company that operates in the Iracema Norte field of the pre-salt layer off the coast of Brazil, from MODEC, Inc. With this transaction, MES will engage in the chartering business.

MES will continue to work toward business engagement and the expansion of related service businesses and

aggressively invest in businesses conducting FPSO chartering. MES will further enhance cooperation with MODEC and continue to focus on the Ocean Business Promotion Department.



## JSEA participates in Posidonia 2016

The 25th Posidonia 2016 (The International Shipping Exhibition) will take place at the Metropolitan Expo Centre in Athens for five days from June 6 through 10. This event is organized by Posidonia Exhibitions SA and sponsored by the Greek Ministry of Mercantile Marine, Union of Greek Shipowners, etc., and organizations related to

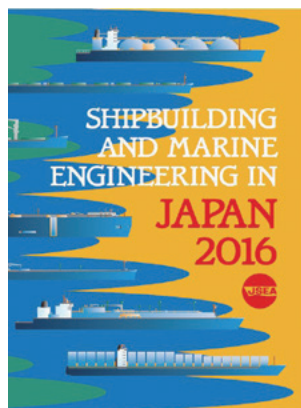
the maritime industry. The Japan Ship Exporters' Association (JSEA) consisting of 10 Japanese shipbuilders will participate in the exhibition with the financial support of The Nippon Foundation and in cooperation with The Shipbuilders' Association of Japan. JSEA will provide the Japanese representation together with the Japanese Marine Equipment Association (JSMEA) on the 220m<sup>2</sup> stand floor and demonstrate the superior technologies accumulated through many years of experience in shipbuilding. Particular ship hull forms and newly developed ship designs will be introduced with photographs, a 120-inch screen, and other presentations.

### Shipbuilders:

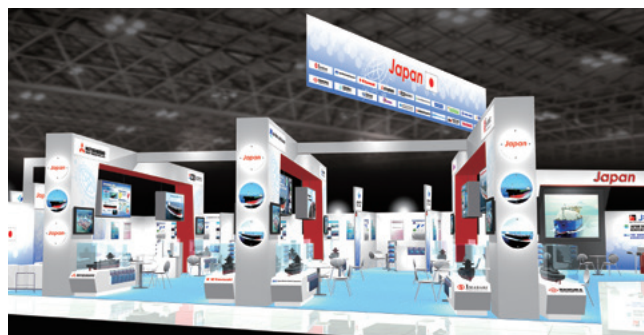
Imabari Shipbuilding Co., Ltd.  
Japan Marine United Corporation  
Kawasaki Heavy Industries, Ltd.  
Mitsubishi Heavy Industries, Ltd.  
Mitsui Engineering & Shipbuilding Co., Ltd.  
Namura Shipbuilding Co., Ltd.  
Oshima Shipbuilding Co., Ltd.  
Sanoyas Shipbuilding Corporation  
Shin Kurushima Dockyard Co., Ltd.  
Sumitomo Heavy Industries Marine & Engineering Co., Ltd.

## Shipbuilding and Marine Engineering in Japan 2016 published

Shipbuilding and Marine Engineering in Japan 2016 has been published by the Japan Ship Exporters' Association (JSEA). The publication (210mm wide x 285mm tall, four color and 64 pages) outlines the latest shipbuilding achievements, both ships and advanced technologies. The details of ships and shipbuilding technology are compiled in a CD-ROM for convenient access. Major contents include the current status of the Japanese shipbuilding industry, recent



trends in ship technology, new completions, new shipbuilding technology, navigation systems, energy-saving equipment and systems, main engines, software for shipbuilding rationalization, and building and repairing facilities, which have been introduced in the last three years.



**CORONA UTILITY**

Owner: Kawasaki Kisen Kaisha, Ltd.  
 Builder: Imabari Shipbuilding Co., Ltd.

Ship type: 88,000DWT type bulk carrier

L (o.a.) x B x D: 234.9m x 38.0m x 19.9m

DWT/GT: 88,847t/49,721

Main engine: 6S60ME-C8.2 diesel x 1 unit

Speed, service: 15.0kt

Classification: NK

Completion: January 13, 2016

**STELLATA**

Owner: Stellata Transportation Corp.  
 Builder: Sumitomo Heavy Industries Marine & Engineering Co., Ltd.

Hull No.: 1382

Ship type: Tanker

L (p.p.) x B x D: 234.34m x 42.00m x 21.45m

DWT/GT: 109,991t/57,997

Main engine: Mitsui-MAN B&W 6S60ME-C8 diesel x 1 unit

Speed, service: about 14.9kt

Classification: LR

Delivery: February 10, 2016

**IVS TEMBE**

Owner: IVS BULK 554 PTE. LTD.  
 Builder: Kanda Shipbuilding Co., Ltd.

Hull No.: 554

Ship type: Log/Cargo ship

L (o.a.) x B x D x d (ext.): 179.90m x 30.00m x 15.00m x 10.772m

DWT/GT: 37,735t/23,224

Main engine: Mitsubishi 6UEC45LSE-ECO-B2 diesel x 1 unit

Speed, service: 14.0kt

Registry: Singapore

Classification: NK

Completion: January 29, 2016

**AFRICAN TURACO**

Owner: Cardinal Maritime S.A.  
 Builder: Onomichi Dockyard Co., Ltd.

Hull No.: 706

Ship type: Bulk carrier

L (o.a.) x B x D x d (ext.): 199.90m x 32.26m x 18.60m x 13.00m

DWT/GT: 60,075t/34,806

Main engine: MAN B&W 6S50ME-B9.3 diesel x 1 unit

Speed, service: 14.5kt

Registry: Panama

Classification: NK

Completion: January 8, 2016

**HALCON TRADER**

Owner: Ratu Shipping Co., S.A.  
 Builder: Shin Kurushima Dockyard Co., Ltd.

Hull No.: S-5871

Ship type: Oils/chemical tanker

L (o.a.) x B x D x d: 149.93m x 24.60m x 13.20m x 10.167m

DWT/GT: 22,421t/13,061

Main engine: 6UEC45LSE-1 diesel x 1 unit

Speed, service: about 14.0kt

Classification: BV

Completion: January 15, 2016

**PRIMROSE ATLANTIC**

Owner: "K" Line Bulk Shipping (UK) Limited

Builder: Tsuneishi Shipbuilding Co., Ltd.

Hull No.: 1515

Ship type: 81,600DWT type bulk carrier

L (o.a.) x B x D x d (ext.): 229.00m x 32.26m x 20.00m x 14.29m

DWT/GT: 81,879t/42,995

Main engine: MAN-B&W 6S60ME-C8.1 diesel x 1 unit

Speed, service: 14.5kt

Registry: Panama

Classification: NK

Completion: January 28, 2016

