

## World's first new built *SANHA LPG FPSO* ready



sisting of steam turbine generators and diesel generators to drive all the systems onboard. M&CS, a highly sophisticated centralized electric control system, to operate and monitor all machinery and cargo systems onboard to realize safe and reliable operation. Nine storey accommodation block with helicopter deck on the foreside of the vessel to accommodate the 60 crew working onboard. External turret to moor the vessel and connect

The *SANHA LPG FPSO* was built and delivered to Single Buoy Moorings Inc (SBM) at the Kure Shipyard of IHI Marine United Inc. on Nov. 4, 2004, and towed by tugs prepared by SBM to offshore Angola. The FPSO unit has now been positioned on site by SBM and will start operation in April 2005.

The *SANHA LPG FPSO* is the world's first and largest newbuilt 135,000m<sup>3</sup> liquefied petroleum gas floating production storage and offloading unit. This FPSO unit, owned by SBM, will engage in production of LPG from associated gas and offload LPG to shuttle tankers at the Sanha Condensate Complex, offshore Angola and operated by Cabinda Gulf Oil Company Limited represented by ChevronTexaco Corporation.

The remarkable features of the *SANHA LPG FPSO* are as follows. Six IHI-SPB (Self-supporting Prismatic-shape IMO Type-B) tanks of low temperature steel to store 135,000m<sup>3</sup> LPG storage in total. Depropanizer, liquefaction, and reliquefaction units integrated with the LPG process plant onboard. High power generation plant con-

the flexible riser to the seabed. Cargo Offloading System to load LPG to shuttle tankers with side by side and tandem links for the future expansion. Aft thruster to control vessel motion due to waves to maintain safe operation.

### Principal Particulars

Shipbuilder: Kure Shipyard, IHI Marine United Inc.

Hull No.: 1063

Classification: American Bureau of Shipping

A1 Liquefied Petroleum Gas Floating Processing, Storage and Offloading System

A1 Floating Offshore Installation

Depropanization, Refrigeration and Reliquefaction Facilities; Ship Type 2G (-50°C, 0.45 kg/cm<sup>2</sup> g, 650 kg/m<sup>3</sup>), DLA, SFA ACCU (minus propulsion plant)

IGS, UWILD, Planned Maintenance System (PMS)

Port of Registry: Nassau, Commonwealth of Bahamas

L (o.a.) x L (b.p.) x B x D x d: 260.00m x 230.00m x 9.00m x 24.00m x 13.20m (Extreme/Summer)

DWT/GT: 93,000t/111,246t



For further information please contact:

Website: <http://www.jsea.or.jp>

## JAPAN SHIP EXPORTERS' ASSOCIATION

15-16, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 Tel: (03) 3508-9661 Fax: (03) 3508-2058 E-Mail: [postmaster@jsea.or.jp](mailto:postmaster@jsea.or.jp)

## 35,000GT luxury passenger and vehicle ferry, *Kiso*

Mitsubishi Heavy Industries, Ltd. (MHI) has completed construction of the *Kiso*, a 35,000 GT-class luxury passenger and vehicle ferry for the owner Taiheiyo Ferries Co. Ltd. The ferry was designed and built at the MHI Shimonoseki Shipyard & Machinery Works, and delivered to the owner on Jan. 5, 2005. The *Kiso* is now engaged in the regular service in Nagoya, Sendai and Tomakomai route.

The ship is the largest ferry in Japan and has superior propulsive performance and powerful maneuvering devices. The accommodation area, which is the most symbolic space of the vessel, was planned and designed according to the concept, "Brightness and Comfort of the South Pacific." This concept was applied to various facilities, amenity equipment and also barrier-free facilities, and passengers can spend luxury time in the areas like a cruise ship. The vessel also has a high loading capacity with 183 units of 12 m length trucks and 47 units of private cars carried simultaneously.

The *Kiso* can offer a comfortable voyage worthy of the description "Luxury" to passengers. The follow-

ing public spaces are provided: Restaurant "Tahiti," Lounge "Southern Cross," Promenade, "Mermaid club" (Piano stage & Bar counter space), Drink hut "Bora

Bpra," "Mauruuru" (Library corner), "Rose room" (Meeting room), Kids' room, Shop, Game corner, Entrance hall, Karaoke room, Grand bath (with grand view), Drivers saloon, and Pet room.

Principal particulars  
 Classification: Japanese Government L (o.a.) x L (b.p.) x B x D (5 deck) x d (design): 199.9m 188.00m x 27.00m x 20.20m x 6.70m  
 GT: 15,795t (Japanese tonnage); (International tonnage 35,100) Deadweight: 7,042t (at d = 6.85m)  
 Main Engine: Mitsubishi-MAN 9L58/64 x 2 units  
 MR 11,840kW X 428 min-1/unit  
 Speed, service: 23.0kt  
 Loading Capacity of Vehicles:  
 12m Trucks: 183 (169) units



8.5m Trucks: 5 units  
 Cars: 47 (113) units  
 Complement  
 Passengers: 800 persons  
 Crew & Others: 78 persons  
 Roll-on roll-off facilities  
 Forward ramp (with bow visor) (3 Deck): 1 unit  
 Stem side ramp (3 deck, P&S): 2 units  
 Internal ramp (3-4 deck): 2 units  
 Internal ramp (2-3 deck): 1 units  
 Internal ramp (1 -2 Deck): 1 unit  
 Lifiable deck with ramp (3 deck, aft) 1 unit  
 Special equipment  
 Bow thruster: 2 units  
 Stern thruster: 1 unit  
 Fin stabilizer: 1 unit  
 Elevator 3 units  
 Propellers: CPPs x 2 units

## Kawasaki completes large bulk carrier, *Cape Riviera*

Kawasaki Shipbuilding Corporation has completed construction of the large bulk carrier, *Cape Riviera* (HN: 1581), at the Sakaide Works for delivery to "K" Line Bulk Shipping (UK) Limited, a subsidiary company of "K" Line (Europe) Limited.

The *Cape Riviera* has a capacity of

185,000DWT. The carrier is designed with streamlined arrangement of cargo handling equipment, etc. which allows simple operation to the crew. The carrier also complies with new regulations for improved ship safety, thus attaining a higher level of safety.

The new ship hull form generates less resistance in ship propulsion. The most advanced energy-saving main diesel engine, high efficiency propeller, and Kawasaki rudder bulb with fins are used.

For environ-

mental protection, measures are taken to reduce emissions from the main engine, and foam agent is used for the fire extinguishers instead the conventional CO<sub>2</sub> agent. Moreover, air conditioners and refrigerators use a new type coolant.

Principal particulars  
 L (o.a.) x L (b.p.) x B x D x d: 290m x 280m x 47.00m x 24.40m x 17.95m  
 DWT/GT: 185,875t/93,006t  
 Cargo hold capacity: 205,722m<sup>3</sup>  
 Main engine: Kawasaki MAN B&W 6S70MC Mk VI diesel x 1 unit  
 MCR: 16,860kW x 91rpm  
 Speed, service: about 14.7kt  
 Complement: 28  
 Classification: NK  
 Completion: Jan 7, 2005



## MES delivers bulk carrier, *Cape Heron*, to Trinity Bulk S. A. of Panama

### New safety regulation applied to Dunkerque-max

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) has delivered the 177,000DWT type bulk carrier, *Cape Heron* (HN: 1615), Trinity Bulk S. A. of Panama at its Chiba Works.

She is a so-called a Dunkerquemax Capesize bulker and follows the new safety regulations for bulk carriers of water ingress alarm system, remote drainage arrangements, strengthening for hatch covers, strength requirements for fore deck fittings and equipment, etc.

Her 177,656DWT capacity is the largest class among Dunkerquemax Capesize bulk carriers. *Cape Heron* employs a new hull form with super wide hatch openings to facilitate cargo-handling work. Her delivery is the seventh among her fifteen sisters ordered from MES.

The super wide hatch opening is

employed to facilitate cargo handling work together with nine-hold and nine-hatch arrangement. The new hull form provides a 197,050m<sup>3</sup> cargo hold capacity, larger than the conventional Capesize bulker.

The ballast tanks are divided into top side tanks and double bottom tanks to make ballasting and deballasting efficient.

The Mitsui-MAN B&W 6S70MC diesel engine demonstrates low fuel consumption by optimal matching at NCR.

#### Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 289.00m x 279.00m x 45.00m x 24.40m x



17.95m

DWT/GT: 177,656t/88,494t

Main engine: Mitsui-MAN B&W

6S70MC diesel x 1 unit

MCR: 16,860kW x 91rpm

Speed, service: 15.0kt

Complement: 28

Classification: NK

Completion: Feb. 25, 2005

## Naikai completes passenger/car ferry for domestic owners

Naikai Zosen Corporation has completed the 2,200GT passenger/car ferry, *Ise Maru* (HN: 686), for the Japan Railway Construction, Transport and Technology Agency (JRJT) and Isewan Ferry Co., Ltd. at the Setoda Shipyard. The ferry is now servicing Toba, Mie Pref., and Tokoname, Aichi Pref. where the newly-opened Central Japan International Airport (so-called Centrair) is located.

The *Ise Maru* is the single deck

type, propelled by two engines and two shafts and with a twin rudder. Outward appearance of the light and streamlined design is suitable for the high-speed ferry. A large bulbous bow and catamaran stern are employed to achieve high-speed navigation, and fin stabilizers are applied to decrease rolling. Swift berthing and unberthing are achieved with the twin Schilling rudder.

The roll-on and -off arrangements

include the bow and stern ramp doors provided at the level of the car deck that can accommodate buses, trucks, and passenger cars. The passenger cabins are arranged on the promenade and

cabin decks. The sunroom is positioned at the stern behind the special room. Large square windows are fitted to provide brightness and amenity. Barrier-free measures are fully considered for elderly and disabled passengers.

#### Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 73.32m x 66.00m x 13.80m x 9.90m (at P. D.) x 3.70m

DWT/GT: 425t/2,200t

Passengers: 500 people (within 3 hour navigation)

Car carrying capacity: 13 buses, or 43 passenger cars

Complement: 14 (crew)

Main engine: Niigata 6MG28HLX x 2 units (two shafts)

MCR: 2,206kW x 750/209min<sup>-1</sup>

NCR: 1,765kW x 696/194min<sup>-1</sup> at 80%

Speed, service: 17.75kt

Classification: JG, still water





## USC completes 106,000DWT tanker, *Esteem Splendour*

Universal Shipbuilding Corp. (USC) completed the 106,000DWT crude oil tanker, *Esteem Splendour*, for delivery to Lepta Shipping Co., Ltd

at the USC's Ariake Shipyard in January 2005. The vessel is the 11th Aframax tanker in the NKK Aframax series.



The ship features large deadweight at shallow draft and large tank capacity with flexibility for port restrictions.

Hull form is designed to realize good propulsive performance with the

SURF-BULB bow. Excellent maneuverability satisfies the IMO requirements. The cargo tank heating system allows carrying high viscous oil. The hull structure is highly reliable based on sophisticated design procedures.

### Principal particulars

L (o.a.) x L (b.p.) x B x D x d: 243.00m x 233.00m x 42.00m x 20.70m x 14.73m

DWT/GT: 105,930t/56,300t

Main engine: Sulzer 7RTA58T diesel x 1 unit

MCO: 14,000 kW x 103 min<sup>-1</sup>

Complement: 28

Classification: LRS

## Kawasaki completes first ME engine for car carrier

Kawasaki Heavy Industries, Ltd. has completed an electronically controlled diesel engine (ME engine). This will be installed, as the main engine, in the 1st car carrier with a capacity of 5,000 cars out of a three vessel series, that are now being built by Kawasaki Shipbuilding Corporation at Nantong COSCO KHI Ship Engineering Co., Ltd. in China and will be delivered to Kawasaki Kisen Kaisha, Ltd.

The engine is the world's first ME engine with a cylinder bore of 60cm. This new ME engine was developed based on the MAN B&W MC model, which is highly reliable and the best selling large marine diesel engine. This engine enables operation at lower fuel oil and cylinder lube oil consumption. Engine operation is stable even at very low speed, and thus ship maneuverability has been improved. The engine is environmentally friendly due to decreased NO<sub>x</sub> and soot in the exhaust gas.

The main features are as follows: exhaust valves and fuel injection pumps are driven by high pressure hydraulic oil controlled through high speed electro-magnetic valves, instead of the conventional driving mechanisms using chain and cam shaft. Optimal engine operation control can

be achieved by setting various modes including optimized fuel consumption mode, largely reduced NO<sub>x</sub> emission mode, etc. Cylinder lube oil injection quantity and timing can be also optimized by the electronic control system. Stable engine operation at low speed is possible compared with the conventional engine.

Kawasaki Heavy Industries, Ltd. has a long relationship with MAN B & W. Kawasaki concluded a license agreement with MAN for the MAN diesel engine in 1911, and renewed the agreement with MAN B&W in 1981 when MAN and B&W merged. Kawasaki has built many MAN B&W diesel engines for marine and land use, totaling nearly 20 million horse powers.

So far Kawasaki Heavy

Industries, Ltd. has received orders for five ME engines in total, three for car carriers and two for two mega container carriers with a carrying capacity of 8,000TEUs.

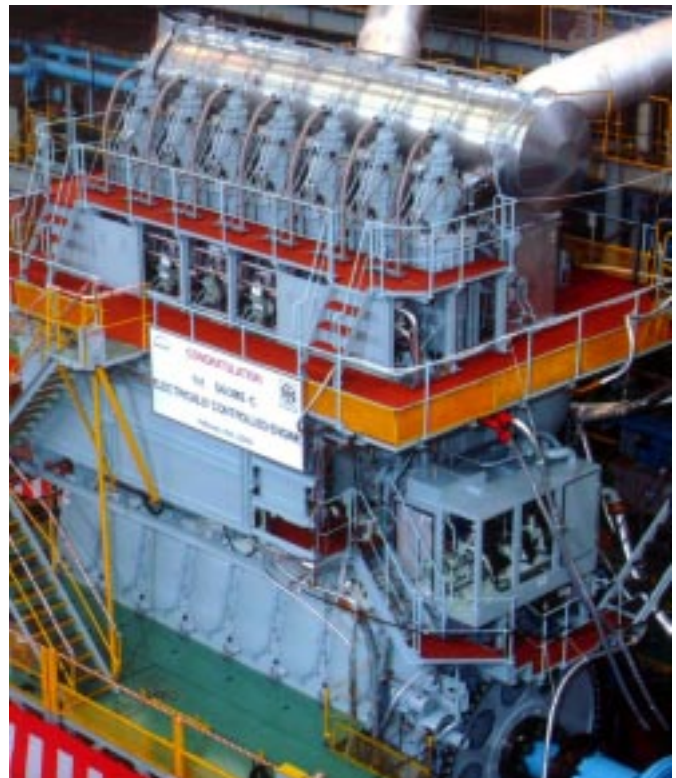
### Outline of first ME engine

Type: Kawasaki-MAN B & W 7S60ME-C

Output: 12,500kW

Engine speed: 99rpm

Cylinder bore: 600mm



## Sanoyas completes Panamax bulk carrier, *Loch Alyn*

Sanoyas Hishino Meisho Corp. has completed construction of the 75,744DWT Panamax bulk carrier, *Loch Alyn* (HN: 1225), for Orient Hakusan Shipping, S.A. at the Mizushima Works and Shipyard of Sanoyas. This carrier is the 53rd of the Sanoyas Panamax series, or the 27th of the 75,500DWT class.

The ship arrangement is the same as the previous vessels. Seven cargo holds are provided in the center of the hull. The cargo hold has top side tanks and hopper bottom. The flat deck is adopted, and the engine room and the living quarters are located aft. The hatch covers are the side rolling type and opening and closing are achieved by chains and hydraulic drives. The main engine is a low-speed, long-stroke,

and 2-cycle diesel engine, and a large-diameter propeller is used. This combination achieves low 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

DWT/GT: 75,744t/38,877t

Cargo hold capacity: 89,201m<sup>3</sup> (grain)

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

Speed, service: 14.5kt

Classification: NK



### To our readers

- Please notify us of any change in address by letter, telefax, or E-mail together with the old mailing label to ensure you continue to receive SEA-Japan.
- We welcome your comments about SEA-Japan. Please address all correspondence to the Japan Ship Exporters' Association (JSEA), or the Japan Ship Centre in London.
- Address (Tokyo): 15-16, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 / Tel: (03) 3508-9661 Fax: (03) 3508-2058  
E-mail: [postmaster@jsea.or.jp](mailto:postmaster@jsea.or.jp)
- Address (London): Ground Floor, 9 Marshalsea Road, London SE1 1EP, UK / Tel: +44 (0) 20 7403 1666 / Fax: +44 (0) 20 7403 1777  
E-mail: [info@jsc.org.uk](mailto:info@jsc.org.uk)  
URL: <http://www.jsc.org.uk>

## JSEA participates in NOR-SHIPPING 2005

The 20th NOR-SHIPPING 2005 (The 20th International Shipping Exhibition and Conference) will take place at the Lillestrom Exhibition Centre in Lillestrom for four days from June 7 through 10. This event is organized by the Norway Trade Fairs (NORGES VAREMESSE) and sponsored by the Norwegian Shipowners' Association and organizations related to the maritime industry.

The Japan Ship Exporters' Association 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 240m<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 plasma vision 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, Ltd.  
Universal Shipbuilding Corporation





*Lodestar Princess*

**Owner:** Global Dream S. A.  
**Builder:** The Hakodate Dock Co., Ltd.  
**Hull No.:** 799  
**Ship type:** Bulk carrier  
**L (b.p.) x B x D x d:** 167.76m x 29.40m x 13.70m x 9.56m  
**DWT/GT:** 31,901t/19,789t  
**Main engine:** Mitsubishi 6UEC52LA diesel x 1 unit  
**Speed:** 14.4kt  
**Classification:** NK  
**Completion:** Feb. 22, 2005

*Elegant Star*

**Owner:** Green Spanker Shipping S. A.  
**Builder:** Namura Shipbuilding Co., Ltd.  
**Hull No.:** 245  
**Ship type:** Bulk carrier  
**L (o.a.) x L (b.p.) x B x D x d:** 288.97m x 279.00m x 45.00m x 24.40m x 17.955m  
**DWT/GT:** 177,216t/89,587t  
**Main engine:** B&W 6S70MC (Mk 6) diesel x 1 unit  
**Speed, trial max.:** 17.03kt  
**Classification:** NK  
**Completion:** Jan. 7, 2005

*Ginga Cougar*

**Owner:** Panther Navigation Inc.  
**Builder:** Shin Kurushima Dockyard Co., Ltd.  
**Hull No.:** 5317  
**Ship type:** Chemical tanker  
**L (o.a.) x B x D x d (summer):** 159.98m x 26.8m x 14.2m x 9.876m  
**DWT/GT:** 25,435t/16,232t  
**Main engine:** 6UEC52LA diesel x 1 unit  
**Speed, service:** about 15.5kt  
**Classification:** NK  
**Completion:** Mar. 9, 2005

*Federal Nakagawa*

**Owner:** Michina Marina, S. A.  
**Builder:** Oshima Shipbuilding Co., Ltd.  
**Hull No.:** 10377  
**Ship Type:** Bulk carrier  
**L (o.a.) x B x D x d:** 199.99m x 23.76m x 14.85m x 10.73m  
**DWT/GT:** 36,489t/20,661t  
**Main Engine:** KAWASAKI MAN B&W 6S46MC-C x 1 unit  
**Speed, trial max.:** 14.5kt  
**Classification:** DNV  
**Completion:** Feb. 15, 2005

*Rudy*

**Owner:** Wah Kwong Shanghai Development Co., Ltd.  
**Builder:** Onomichi Dockyard Co., Ltd.  
**Hull No.:** 506  
**Ship Type:** Product tanker  
**L(o.a.) x B x D x d:** 182.50m x 32.20m x 18.10m x 12.617m  
**DWT/GT:** 47,278t/26,924t  
**Cargo tank capacity:** 53,704m<sup>3</sup>  
**Main Engine:** Mitsui MAN B&W 6S50MC (Mk VI) diesel x 1 unit  
**Speed, service:** 15.0kt  
**Classification:** B. V.  
**Completion:** Jan. 20, 2005

*Formosaproduct Brick*

**Owner:** Formosa Brick Marine Corporation  
**Builder:** Universal Shipbuilding Corporation  
**Hull No.:** 4999  
**Ship type:** Product tanker  
**L (o.a.) x B x D x d:** 228.50m x 32.20m x 19.60m x 13.62m  
**DWT/GT:** 70,426t/39,307t  
**Main engine:** MAN B&W 7S50MC Mk6 diesel x 1 unit  
**Speed, service:** 15.0kt  
**Classification:** BV  
**Completion:** Apr. 1, 2005