

JMU completes 25,000DWT high ice class bulk carrier, NUNAVIK



Japan Marine United Corporation (JMU) delivered NUNAVIK, a 25,000DWT high ice class bulk carrier, to Federal Hudson Ltd. through Sumitomo Corporation at Tsu Shipyard on January 30, 2014.

NUNAVIK is one of the world's largest icebreaking bulk carriers. The prototype is UMIAK I which was built at JMU Maizuru Shipyard in 2006. UMIAK I has provided excellent service in operation in Canadian ice fields. NUNAVIK is designed to carry nickel concentrate from the mine located at Nunavik on the east side of Hudson Bay in Canada to Europe.

This icebreaker vessel has DNV notations of "PC-4" and "ICE-15" and has continuous icebreaking capability to pass through 1.5-meter thickness ice at three knots. The hull form including the bow shape for ice breaking was developed based on the owner's expertise and the test results at the ice tank in JMU's technical research center. Like UMIAK I, a bow washing system for reducing friction between ice and the hull, a heeling system using ballast water,

a ducted propeller, and an ice knife in the stern are equipped.

The vessel has five cargo holds for nickel concentrate, which are protected by a double hull, and the No. 3 cargo hold is designed to allow transport of diesel oil to the mine. In order to carry supplies to the mine, this vessel can load containers on the upper deck and equipment in cargo holds with three deck cranes.

The combination of an electronically controlled low-speed diesel engine and a ducted controllable pitch propeller is unique for an icebreaker and is effective in both open water and ice covered water.

Principal particulars

L (o.a) x B (mld.) x D (mld.):	188.80m x 26.60m x 15.70m
DWT/GT:	24,997t/22,622
Main engine:	MAN B&W 7S70ME-C8.2 diesel x 1 unit
Speed:	13.5kt
Complement:	30
Classification:	DNV



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Kawasaki completes 58,606DWT bulk carrier, EUROPA BAY

Kawasaki Heavy Industries, Ltd. delivered the EUROPA BAY (HN: 1693), a 58,606DWT type bulk carrier, to "K" Line Bulk Shipping (UK) Limited at its Sakaide Works. The vessel is the 31st state-of-the-art bulk carrier of the 58,000DWT series developed by Kawasaki.

The vessel has a flush deck with a

forecastle and five cargo holds designed for optimum transport of grains, coals, ores, and steel products. Four 30t deck cranes are installed along the centerline between the hatch covers to facilitate cargo handling at ports that lack cargo-handling facilities.

The vessel employs the latest technologies to achieve maximum fuel economy, including an energy-saving main diesel engine, highly efficient propeller, and the Kawasaki semi-duct system with contrafins (SDS-F) and rudder

bulb with fins (RBS-F), which all contribute to the enhanced propulsion performance.

The main and generator engines comply with Tier II NO_x emission standards set by the International Convention for the Prevention of Pollution from Ships.

Principal particulars

L (o.a.) x L (b.p.) x B x D x d:	197.00m x 194.00m x 32.26m x 18.10m x 12.65m
DWT/GT:	58,606t/33,126
Cargo hold capacity:	73,614m ³
Main engine:	Kawasaki MAN B&W 6S50MC-C7 diesel x 1 unit
MCR:	8,683kW x 116rpm
Speed, service:	14.5kt
Complement:	28
Classification:	NK
Registry:	Panama
Classification:	DNV



MES delivers 72,800DWT open hatch general cargo carrier, SISKIN ARROW

Mitsui Engineering & Shipbuilding Co., Ltd. (MES) completed and delivered a 72,800DWT type open hatch jib crane general cargo carrier, SISKIN ARROW (HN: 1839) at its Chiba Works to Misuga S.A., Panama, on January 21, 2014. This is the fourth vessel of its series, which has a large cargo hold capacity of more than 86,600m³ with eight box-shaped cargo holds.

1. The vessel is one of the largest open hatch general cargo carriers in the world with eight box-shaped cargo holds and four jib cranes for handling cargo.
2. The vessel has three pairs of piggyback-type hatch covers to have large hatch openings.
3. The vessel has large hatch openings, which has no protruding object, and higher structural reliability with the characteristic structure of the hatch corners.
4. In consideration of carrying forest products, bulkheads of cargo hold have no protruding objects and dehumidifier system is provided.
5. Fittings for container and packaged

lumber loading are fitted on the hatch covers.

6. A hydro-dynamic energy saving device on the rudder achieves good propulsive performance.
7. MITSUI-MAN B&W diesel engine 5S60ME-C8 is a light, compact and high output electronically controlled engine complying with MARPOL NO_x restriction for exhaust gas.
8. The bow thruster and high-lift rudder enables good maneuverability in port.
9. The vessel has a ballast water treatment system for protection of marine environment in advance of forthcoming entry into force of Ballast Water Management Convention.

Principal Particulars

L (o.a.) x L (b.p.) x B x D:	210.00m x 202.00m x 36.00m x 20.20m
DWT/GT:	72,927t/46,295
Main engine:	MITSUI-MAN B&W 5S60ME-C8 (Mark 8) diesel x 1 unit
MCO:	9,450kW x 89rpm
Speed:	14.5kt
Complement:	30
Classification:	NK
Registry:	Marshall Islands
Delivery:	January 21, 2014



MHI completes fast ferry, HIGH SPEED SHIP KOSHIKISHIMA

Mitsubishi Heavy Industries, Ltd. (MHI) delivered the HIGH SPEED SHIP KOSHIKISHIMA, an aluminum-monohull fast ferry to the owners, Japan Railway Construction, Transport and Technology Agency and Satsumasendai City on March 20, 2014.

The vessel was designed and built at the Shimonoseki Shipyard & Machinery Works of MHI and is now plying between Sendai Port and the Koshiki Islands.

The combination of high performance hull form and propellers achieves high fuel saving and fast service speed. The fin-stabilizer can decrease rolling during navigation under rough sea conditions. The ship is also equipped with an anti-pitching fin at the forehull bottom and a controllable trim-tab to suppress pitching.

Space arranged on and under the

upper deck for the passengers, and facilities on the upper deck are barrier-free. A bow thruster and two rudders are installed to facilitate smooth berthing and unberthing. All these features ensure a comfortable voyage for the passengers.

Principal particulars

L (o.a.) x L (w.l.) x B x D x d (des):
45.70m x 42.00m x 7.00m x 3.15m
x 1.30m
GT: 197t (Japanese tonnage)
Machinery
Main engine: MTU12V4000M70 engines x 2 units
MR: 1,680kW x 2000min⁻¹/unit



Propeller: Fixed pitch propeller x 2 units
Speed, service: 26.7kt
Complement
Passenger: 200 persons
Crew: 5 persons
Classification: Japanese Government
Registry: Japan (Satsumasendai city, Kagoshima)

NAMURA completes 250,000DWT-type ore carrier, IRON PILBARA

Namura Shipbuilding Co., Ltd. delivered the IRON PILBARA, a 250,895DWT ore carrier, to EL SOL MARITIME S.A. at its Imari Shipyard & Works on February 4, 2014.

This is the 16th vessel of 250,000DWT type ore carriers called "WOZMAX," and the principal dimensions of the vessel satisfy the restrictions of Port Hedland, Port Walcott, and Dampier, which are the three major ports in Western Australia

(WOZ). The mooring arrangement also satisfies the requirements of Ponta Da Madeira in Brazil, which allows the vessel to call at the port.

The vessel was constructed by complying with the requirements of the latest amendments of the international regulations at the construction stage. Moreover, improved propulsion performance and fuel oil saving can be achieved with adoption of the Namura flow Control Fin (NCF) and

Rudder-fin (R-Fin), both developed by Namura.

The main engine of the vessel is the MAN B&W 7S80MC-C (Mark 7) type and drives a single fixed pitch propeller. The machinery in the engine room is automated based on the NK M0 concept.

For the machinery section, a centralized fresh water cooling system is adopted to ease maintenance. Water ballast pumps with a large capacity are installed for quicker cargo loading operation. IMO PSC-WBT is applied for corrosion protection of water ballast tanks to increase the safety of the vessel.

Principal particulars

L (o.a.) x B x D x d: 329.95m x 57.00m
x 25.10m x 18.00m
DWT/GT: 250,895 t/132,587 t
Main engine: MAN B&W 7S80MC-C (Mark 7) diesel x 1 unit
Speed, service: about 15.0kt
Complement: 25
Classification: NK
Registry: Republic of Liberia



*LH2 carrier construction approval***Kawasaki obtains ClassNK AiP for LH2 cargo containment system**

Kawasaki Heavy Industries, Ltd. has obtained the Approval in Principle (AiP) from the Nippon Kaiji Kyokai (ClassNK) for designing and fabricating a cargo containment system (CCS) to be installed on a liquefied hydrogen (LH2) carrier.

ClassNK granted AiP to Kawasaki complying with the IGC code (International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk) and Ship Classification rules as well as based on the risk evaluation results from the HAZID (Hazard Identification Study) Analysis.

The LH2 CCS will be used for the world's first LH2 carrier being developed by Kawasaki and is a cryogenic accumulation type cargo containment vessel with a capacity of 1,250m³ since LH2 is more volatile compared with LNG. Kawasaki has developed this tank system using its rich expertise obtained through construction of LNG carriers as well as LNG and LH2 storage and transport facilities. Since LH2 has a very low temperature of below -252°C, the LH2 carrier will use an independent horizontally laid cylindrical containment vessel that will contract freely from hull structures.

The LH2 boil-off gas (BOG) gener-



An appearance of the LH2 carrier (2,500m³ capacity)

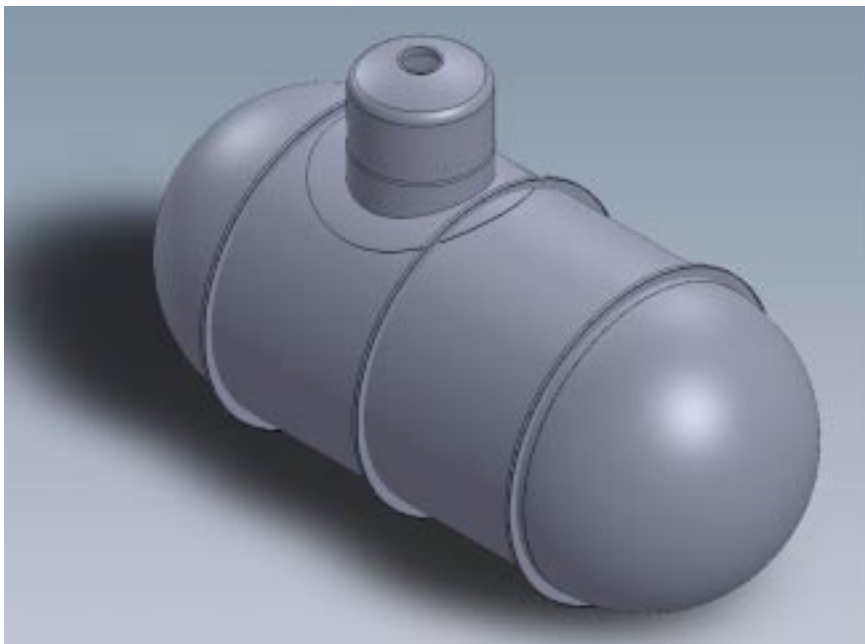
ated due to external heat penetration will tightly be contained inside the pressure-resistant cargo containment vessel with the accumulation system. Adoption of the accumulation system will allow unloading of LH2 not only by a pump built in the cargo containment vessel but also under pressure. To minimize BOG rate during transport, the cargo containment vessel will be a double shell type for which a vacuum heat insulation system has newly been developed. A newly developed glass fiber reinforced plastic (GFRP) material will be used for the

support structures of the cargo containment vessel. This material has very low heat conduction and sufficient structural strength, resulting in good heat insulation efficiency.

A dome chamber that will perform as a manhole will be added to the double-shell construction of the cargo vessel, which will permit inspection inside the cargo containment vessel when docking.

In Japan, the hydrogen market is expected to increase in the near future due to the launching of fuel cell vehicles (FCV) in the market and shifting to alternative energy sources. Kawasaki's LH2 carrier (total LH2 transport capacity: 2,500m³) will be designed to have two units of cargo containment vessels, and the hull will have double side-shells and bottom for the compartment of cargo containment vessels. This will ensure safety of the ship against collision or stranding. Moreover, a cargo hold cover will protect the cargo containment vessels from external damage and shut off open air.

The main engine will be a diesel engine while an onboard test facility and laboratory will be installed to conduct experiments on the fuel cell and hydrogen gas turbine to research the utilization of BOG in the future.



Cargo containment vessel for the LH2 carrier

Sanoyas completes 4,300,000cft woodchip carrier, EAGLE SKY

Sanoyas Shipbuilding Corporation delivered the EAGLE SKY (HN: 1317), a woodchip carrier, to its owner Ocean Woodland Shipping Co., Ltd. on January 30, 2014. The carrier was constructed at the Sanoyas Mizushima Shipyard.

The vessel is the Sanoyas developed 4.30 million cubic feet (approximately 121,000m³) type wood chip carrier with a wide beam and shallow draft, which is one of the largest cargo hold capacities in the world. This is the second vessel built by Sanoyas complying with the fuel oil tank protection regulations and "Performance Standard for Protective Coatings" (PSPC) of the International Maritime Organization.

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

Improved propulsion efficiency of the vessel is achieved with a low-speed and long-stroke main engine combined with a high-efficiency propeller together with the Sanoyas energy saving device "STF" (Sanoyas-Tandem-Fin (patented): max. 6% energy saving) on the stern shell, all of which also contribute to the reduction of CO₂ emissions.

A 975t/h chip unloader, three deck cranes, and four hoppers are installed between the cargo hatches. The main belt conveyor is laid fore-and-aft over the main deck, and a shuttle conveyor is equipped on the bow to unload woodchips from the ship to a shore facility. All cargo handling equipments are designed for quick and safe unloading work. The cargo hatch covers are the folding type driven by an electro-hydraulic system.

Principal particulars

Owner: Ocean Woodland Shipping



Co., Ltd.	
Hull No.:	1317
Ship type:	Woodchip carrier
L (o.a.) x L (b.p.) x B x D x d:	209.99m x 204.00m x 37.00m x 22.85m x 11.929m (ext.)
DWT/GT:	63,328t/49,718 t
Cargo hold capacity:	121,605m ³ (4,294,466ft ³) (grain)
Main engine:	MAN B&W 6S50MC-C8 diesel x 1 unit
MCO:	9,480kW
Speed, service:	about 14.6kt
Complement:	28
Classification:	NK
Registry:	Panama
Delivery:	January 30, 2014

JSEA participates in Posidonia 2014

The 24th Posidonia 2014 (The International Shipping Exhibition) will take place at the Metropolitan Expo Centre in Athens for five days from June 2 through 6. 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 11 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 comprise the Japanese representation together with the Japanese Marine Equipment Association (JSMEA) on the 489m² stand floor and demonstrate the su-

perior technologies accumulated through many years of experience in shipbuilding. Particular ship hull forms and newly developed ship designs will be introduced with photographs, a 183-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
Sasebo Heavy Industries Co., Ltd.
Shin Kurushima Dockyard Co., Ltd.
Sumitomo Heavy Industries Marine & Engineering Co., Ltd.



CORETALENT OL

Owner: Coretalent Maritime S.A.,
Panama
Builder: The Hakodate Dock Co., Ltd.
Hull No.: 862
Ship type: Bulk carrier
L (o.a.) x B x D x d: 175.53m x 29.40m
x 13.70m x 9.640m
DWT/GT: 31,669t/19,816
Main engine: Mitsubishi 6UEC45LSE
diesel x 1 unit
Speed, service: 14.4kt
Classification: NK/CR
Complement: 24
Completion: February 20, 2014

**KORYU**

Owner: RUPANCO INC.
Builder: Imabari Shipbuilding Co.,
Ltd.
Ship type: Ore and sulphuric acid car-
rier
L (o.a.) x B x D: 189.95m x 32.26m x
17.90m
DWT/GT: 53,762t/30,476
Main engine: Hitachi-MAN B&W
6S50MC-C7.1 2 cycle diesel engine
x 1 unit
Speed, service: about 15.0kt
Classification: NK
Completion: December 3, 2013

**RTM DJULPAN**

Owner: Rio Tinto Shipping Limited
Builder: Oshima Shipbuilding Co.,
Ltd.
Hull No.: 10691
Ship type: Bulk carrier/Tanker for
caustic soda
L (o.a.) x B x D x d (ext.): 225.00m x
32.26m x 18.90m x 13.778m
DWT/GT: 70,373t/38,617
Main engine: Mitsubishi
7UEC50LSE-Eco diesel x 1 unit
Speed, service: 14.50kt
Registry: UK
Classification: DNV
Completion: December 4, 2013

**OCEAN LORD**

Owner: United Ocean Hull No. S-1529
S.A.
Builder: Tsuneishi Shipbuilding Co.,
Ltd.
Hull No.: 1529
Ship type: Bulk carrier
L (o.a.) x B x D x d: 228.99m x 32.26m
x 20.05m x 14.429m
DWT/GT: 82,134t/43,005
Main engine: Mitsui MAN B&W
6S6MC-C (Mark 7) diesel x 1 unit
Service, speed: 14.5kt
Registry: Panama
Classification: NK
Completion: February 28, 2014

**KEN EI**

Owner: Delica Shipping S.A.
Builder: Onomichi Dockyard Co., Ltd.
Hull No.: 568
Ship type: Super box shaped bulker
L (o.a.) x B x D x d (ext.): 177.85m x
28.60m x 15.00m x 10.85m
DWT/GT: 37,056t/22,863
Main engine: Mitsubishi 6UEC45LSE
type diesel x 1 unit
Speed, service: 14.7kt
Registry: Panama
Classification: NK
Completion: November 12, 2013

**AFRICAN TEIST**

Owner: Cassiopeia Marine S.A.
Builder: Shin Kurushima Dockyard
Co., Ltd.
Hull No.: 5765
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: 32,800t/21,100
Main engine: 6UEC45LSE-1 diesel x
1 unit
Speed, service: 14.3kt
Registry: Panama
Classification: NK
Completion: March 2014

