

## Delivery of Newly Developed LNG Transport Vessel *LNG FUKUROKUJU*

Kawasaki recently delivered the *LNG FUKUROKUJU*, a liquefied natural gas (LNG) transport vessel for use by The Kansai Electric Power Co., Inc. and Mitsui O.S.K. Lines, Ltd.

The first of Kawasaki's newly developed line of 164,700 m<sup>3</sup> capacity LNG carriers to be commissioned, this ship is designed to enable passage through the newly expanded Panama Canal, which is scheduled to open for full operations in 2016. The vessel features standard LNG carrier hull dimensions in order to enable docking at major LNG terminals around the world while offering larger cargo tanks for increased transport capacity, thus cutting LNG transport costs and facilitating more flexible LNG trade operations by ship-owners. In addition, Kawasaki has made

hull structure improvements to decrease overall ship weight and achieved a more optimal below-waterline hull design to fully optimize propulsive performance.

The new carrier is also equipped with a Kawasaki Advanced Reheat Turbine Plant (Kawasaki URA Plant) as its main engine

unit. This reheating-type steam-turbine propulsion plant developed by Kawasaki offers a significant improvement of more than 25% in transport efficiency compared with previous, 147,000 m<sup>3</sup> capacity LNG carriers.



## JASDF Receives First Mass-produced C-2 Transport Aircraft

On June 30, Kawasaki delivered the first in a series of mass-produced C-2 transport aircraft at the company's Gifu Works to the Japanese Ministry of Defense (MOD). Since then, the aircraft has been used by the Japan Air Self-Defense Force (JASDF).

The C-2, in development by the MOD since FY 2001, will serve as a replacement for existing C-1 transport aircraft. This new model is larger than the C-1, enabling the transport of greater amounts of cargo. The adoption of a newly devel-

oped flight management system achieves greater aircraft control at low altitudes, and the cargo handling system enables centralized control of cargo loading and unloading operations to reduce human labor, both of which lessen demands placed on pilots and other crew members. Furthermore, the C-2 features engines produced by the General Electric Company, which enable significantly improved speeds, an extended flight range and other advantages over the C-1.

After being selected in November 2001 by the MOD as the primary contractor for the development of the next-generation XP-1 fixed-wing patrol aircraft and XC-2 transport aircraft, Kawasaki set about designing and manufacturing prototypes of these new models. The company succeeded in its maiden flight of the initial XC-2 prototype in January 2010, and proceeded to deliver the first prototype model to the MOD in March 2010 and the second prototype in March 2011. The Ministry has subsequently been carrying out its own aircraft tests.

In FY 2011, Kawasaki concluded its first contract with the MOD for the production of the C-2 aircraft, reflecting various improvements in the production model design before moving on to actual manufacturing operations. Following the recent delivery of the first C-2 production model, the company intends to continue with subsequent aircraft deliveries according to schedule.



## Tokyo Robot Center Showroom "Kawasaki Robostage" Opened

On August 6, Kawasaki opened its new Tokyo Robot Center Showroom, a facility where industry members and the general public can access robotics-related information to deepen their understanding of robots and their place in society, both now and in the future.

The newly opened "Kawasaki Robostage," located in Odaiba, Tokyo, is designed to connect human creativity with Kawasaki's advanced technologies while providing opportunities for visitors to gain insight into the current and envisioned future relationship between humans and robots, which will revolve around har-

mony and beneficial coexistence. In keeping with the facility's main theme of "human-robot coexistence and collaboration," Kawasaki proposes new forms of human-robot coexistence and collaboration for the coming robot society.

By establishing a base in Tokyo, which is attracting increased attention with the approach of the Tokyo Olympic Games in 2020, Kawasaki strives to enhance the company's brand value by showcasing the current and future world in which humans and robots co-exist and collaborate. The new facility will also serve as a communication center

and promote more robust collaboration with government agencies, research institutions, universities, and graduate schools. With technologies that enable networking between the Internet and physical objects—known as the Internet of Things (IoT)—expected to have a major impact on the ways in which robots are used, Kawasaki plans to make the facility capable of IoT research and testing.

"Japan's Robot Strategy," a government-led initiative, is expanding robot applications to a wide range of fields. By positioning this new showroom as a place to experience easy-to-use robots as well as a promotional robotics hub for the 2020 International Robotics Competition, Kawasaki is contributing toward the government's goal of robotics industry growth and the widespread introduction and integration of robots at small and medium-sized companies.



The ribbon-cutting ceremony. From left: Yasuhiko Hashimoto, General Manager, Robot Division, Yoshinori Kanehana, President, and Saya Ichikawa, TV personality.



## HEPCO Orders World's Largest Class Aboveground LNG Tank

Kawasaki recently received an order from Hokkaido Electric Power Co., Inc. (HEPCO), jointly with Obayashi Corporation, for the construction of an aboveground-type liquefied natural gas (LNG) tank at the Ishikari LNG Terminal. HEPCO plans to begin using the new tank in 2020.

Set to be one of the world's largest aboveground LNG tanks, it is a full containment tank with a PC outer wall and a 230,000 kiloliter capacity. Serving as a fuel-gas storage facility mainly to supply natural gas to the Ishikariwan Shinko Thermal Power Station, the new tank will be the second HEPCO tank installed at the Ishikari LNG Terminal. The Ishikariwan

Shinko Thermal Power Station is HEPCO's first LNG-fueled thermal power facility, built to achieve diversification of fuel types, decentralization of power supplies and more stable provision of electric power into the future.

The Ishikari LNG Terminal is operated by Hokkaido Gas Co., Ltd. (Kita Gas), which uses it jointly with HEPCO. Kita Gas owns the No. 1 Tank and No. 2 Tank at the terminal and they are currently operational. HEPCO owns one tank, the No. 3 Tank, which is under construction. The latest order received by Kawasaki is for the fourth tank. The company was previously contracted to construct the No. 1

and No. 3 Tanks as well.

The roots of Kawasaki's LNG tank business can be traced back to its first in-ground tank delivered in 1982 and first aboveground tank delivered in 1983. Since then, the company has constructed all types of LNG tanks utilized throughout Japan, such as single containment tanks, in-pit tanks, PC outer wall full containment tanks, and membrane-type in-ground tanks. Kawasaki has also participated in technological cooperation projects in South Korea and other overseas construction projects, with a total of 42 LNG tanks built domestically and abroad.