Isabella Kosan

Ship of the Year

Lauritzen Kosan receives Lloyd's List top 2008 award for engineering and environmental innovation.

At a well-attended black-tie and evening-gown event – think of it as the Oscar awards of shipping – in London this April, the *Isabella Kosan* was honoured with the Lloyd's List Ship of the Year award. Completed in 2007, the *Isabella Kosan* was the first in a series of ten semi-pressurised and fully refrigerated gas carriers with the capability to carry ethylene. These vessels incorporate many technical and environmental innovations, such as the ability to capture and utilise gas vapours that would ordinarily be released into the atmosphere. In fact, the *Isabella Kosan* and her sister ships are the first gas carriers designed to comply with the International Maritime Organisation's (IMO) Green Passport concept and the CLEANSHIP class notation for pollution prevention.

In choosing a winner, Lloyd's List considered a range of factors, including innovation, safety, environmental protection, and operating efficiency. Responding to Lloyd's request for information about the ship's special features, Lauritzen Kosan emphasised environmental factors. "We particularly stressed that, throughout the design and building phases, we gave special attention to minimising the impact the *Isabella Kosan* would have on the environment," says Jan Kastrup-Nielsen, president of Lauritzen Kosan. "And we were equally concerned with the environment onboard – with deck and bridge layout, minimising noise and vibrations, and so on – to ensure a high level of comfort and safety for the crew working onboard."

Technical innovations
The design for this series of ethylene gas carriers was developed by Lauritzen Kosan together with TGE Marine Gas Engineering and in close cooperation with Sekwang Heavy Industries, the shipyard in Ulsan, Korea. Among the technical innovations that set the *Isabella Kosan* apart are:

Deck Containers
Instead of fixed N2 units and fixed deck tanks for gassing up, these new ships employ a containerised system that provides tremendous flexibility. In case the vessel's trade demands frequent inerting operations, a further PSA container unit can be added, doubling the N2 production capacity. Similarly, containerised deck tanks provide 20' and 40' units for LPG, as well as 40' cryogenic tank containers for ethylene. This enables the vessel's deck tank composition to be adjusted to suit its commercial trade. The combination of containerised tanks also enables a complete change of atmosphere in the cargo tanks without venting any product into the atmosphere or calling at a shore terminal.

Dual Fuel Auxiliary Engine
Together with MAN Diesel, Holeby, Denmark, Lauritzen Kosan developed a "gas-train" for one of the vessel's auxiliary engines. This allows the ship to utilise most surplus cargo remnants collected in one of the deck tank containers instead of venting them into the atmosphere. The gas train injects the gas into the auxiliary engine together with the charging air, at one stroke helping to power the ship while protecting the environment.

Two separate compressor shelters
Whereas most semi-refrigerated gas carriers of this size are equipped with one central compressor shelter, these vessels have two identical shelters. In addition to providing redundancy, this minimises the length of the cargo piping dramatically, thus reducing heat ingress and pressure drop during the cooling operation and providing considerable reduction in energy use.

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Jan Kastrup-Nielsen (on right in photo)
President, Lauritzen Kosan