The Tragic Saga of Koho Maru 5, A.K.A. Pak-1

Japan imports huge amounts of gas and does so using her own vessels rather than vessels registered to the country of origin of the imported fuel. Indeed, the 'supertanker' was developed to enable Japan to import increased amounts of crude oil when she expanded her refining capacity in the 1950s. Japan receives shipments not only crude oil but also liquefied natural gas (LNG) and liquefied petroleum gas (LPG).

A vessel for LPG transport called the Koho Maru-5* was manufactured and commissioned in Japan in the early 1970s and, with Japanese registration, was used for its intended purpose until it was purchased by a Thai company, re-registered to Thailand and renamed Pak-1. It was therefore as Pak-1 that she sank in the Gulf of Thailand in the mid 1990s after a collision with a Thai Navy vessel. The exact date of the incident is not known and Lloyd's Register have no record of it, nor is it certain whether the vessel was actually carrying LPG at the time of the collision. There have been suggestions – no more – that the tanks were empty or that they were in fact holding liquid fertiliser. Information from apparently authoritative sources is conflicting and in preparing this brief account the author has had to tread warily.

On sinking, the vessel settled initially in vertical orientation with the LPG tanks uppermost a few metres below the water surface. The wreck became a major attraction to divers, vertical wrecks being few and far between. They observed and reported leakage of diesel, the vessel's own fuel. In 2001, about five years after sinking, Pak-1 moved to horizontal orientation and, with about 6 metres of her structure visible above the water, began to drift. The drifting wreck was obviously a danger to other vessels, and the Thai Navy set about sinking Pak-1 once and for all.

It was towed to a part of the Gulf of Thailand away from shipping lanes and high explosives were applied. It now reposes in a horizontal position at the bottom of the sea about 10 miles from the mainland and continues to be an attraction to divers.

The most serious aspect of this matter has been left until the end for mention: there were fatalities amongst the crew of Pak-1 when she sank, seven such according to one report.

** Koho Maru means 'Light of Japan': many Japanese Navy vessels have had the same name with different numerals to distinguish them.*

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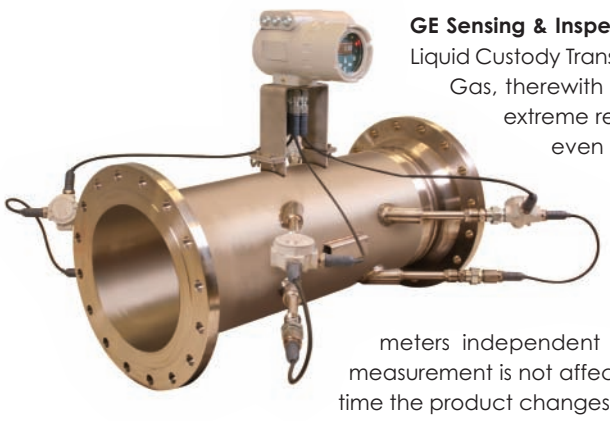
Self-diagnostic Valve Position Monitor

The new Type 3738 Electronic Valve Position Monitor by **Samson** (Germany) can be used on on/off valves in all fields of application. It indicates the end positions and controls the actuators.

Thanks to its contactless, magnetoresistive sensor system and an integrated microprocessor, the valve position monitor can be configured at the push of a button. The first device of its kind works with a NAMUR signal in compliance with IEC 60947-5-6 and is powered by a two-wire supply. As a result, the valve position monitor can replace solenoid valves and limit switches without having to change the wiring or signal levels. At the same time, it includes functions like self-tuning and diagnostics, which opens up a wide range of opportunities for control and asset management.

The supply air for the actuator is routed through bores at the bottom of the housing, making additional tubing unnecessary. The valve position monitor is thus suitable for integrated attachment, which facilitates mounting and guarantees exceptional ruggedness. The contactless position sensor makes adjustments as well as moving levers redundant.

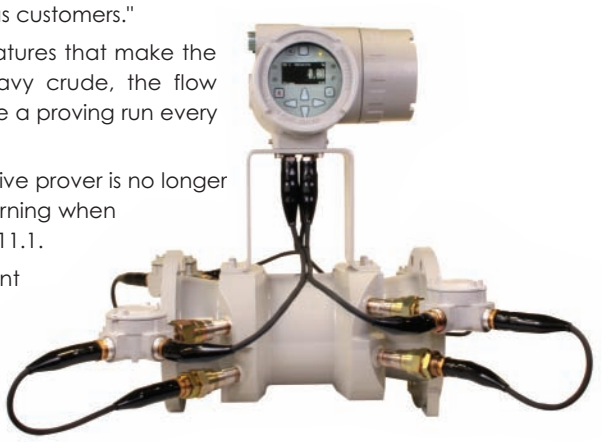
New Custody Transfer Flowmeters - Combining Extremely Reliable Flow Measurement With the Highest Accuracy



GE Sensing & Inspection Technologies (USA) announces the release of Sentinel LCT and Sentinel LNG. Sentinel LCT has been designed for Liquid Custody Transfer measurements of crude oil and refined oil products. Sentinel LNG provides accurate measurement of Liquefied Natural Gas, therewith offering an improved accuracy compared to traditional ship and tank level measurement. Both flowmeters combine extreme reliability with very high accuracy. Extensive CFD (computational fluid dynamics) is used to guarantee the high accuracy, even under conditions where flow conditions change constantly.

"With Sentinel LCT and LNG we are adding the highest accuracy ultrasonic liquid flowmeters in the industry to our already robust line of flowmeters," says Ashish Bhandari, General Manager of the flow segment at GE Sensing & Inspection Technologies. "GE Sensing & Inspection Technologies is committed to investing in technology and will continue to leverage our expertise to elevate productivity for our oil & gas customers."

Sentinel LCT has a number of unique, GE proprietary, features that make the meters independent of viscosity changes. Whether measuring gasoline or a heavy crude, the flow measurement is not affected by viscosity changes, unlike mechanical meters that require a proving run every time the product changes.



This not only saves the customer time and potential for human errors, but ultimately it means an expensive prover is no longer required on site at all. Sentinel LCT uses advanced diagnostics to performs continuous self-checks and will send out a warning when something goes wrong. A built-in flowcomputer allows for pressure, temperature and density corrections according to API 11.1.

Sentinel LNG is designed specifically for cryogenic LNG measurements. With an externally certified measurement uncertainty of 0.2 to 0.25%, the meter is an obvious alternative to ship and tank level measurement. Where a level measurement needs multiple level, pressure and temperature transducers to compensate for density variations, just one Sentinel LNG is required to measure the total volume during loading and unloading of a ship or tanks. Tanks trapping tables and corrections for a ship that moves due to wave motion are no longer required, allowing for a significant improvement in measurement accuracy.