Recovery position

As the maritime industry becomes increasingly aware of the importance of eco-safety, JLMD Ecologic Group discusses the development of its Fast Oil Recovery System

The principle of Corporate Social Responsibility (CSR) is gaining recognition from an increasing number of shipping companies and is also being considered by the International Maritime Organization (IMO). The organisation's development of new ship construction standards will see the setting of new goals for safety and environmental protection. The ongoing work in this area marks a major change in the global maritime approach to safety regulation, and marks a fundamental shift towards a risk-orientated approach.

In this context, accidental pollution becomes a significant environmental issue, and technical solutions to this problem will be expected to satisfy the demands of all players in the shipping industry.

A newly created association, the **Maritime Passive Safety (MPS) Association**, will bring together international expertise to give advice on vessel equipment and processes which can mitigate the consequences of accidental oil pollution.

Passive safety experts have identified problems with current ship design when pollutant recovery operations have to be performed. Whilst ship designers have made great progress in eco-efficiency, such as reducing nitrogen oxide (NOx) and sulphur oxide (SOx) emissions, and using water ballast treatment and anti-fouling technologies, these measures do not necessarily make such ships eco-safe.

The idea of eco-safety has been a key issue for **JLMD Ecologic** during 10 years of analysis driven by a risk-based approach. The France-based engineering company is one the main founders of the MPS association, and its *Fast Oil Recovery (FOR) System* is a key item of a vessel's post-accident equipment.

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FOR Systems are onboard emergency pollutant recovery devices for cargo and bunker tanks. Each tank is permanently equipped with a minimum of two security circuits that can be easily accessed via dedicated connectors located on the ship's upper deck. The FOR System allows a salvage team to connect two hoses and evacuate the potentially polluting cargo from a vessel. Sea water is injected by the salvage team, and the system then uses the Archimedes buoyancy principle (in that the oil is lighter than water) and the fuel is then propelled upwards for complete recovery via the other circuit. The FOR System allows bunker fuel to be rapidly recovered, without the use of any kind of liquid pollutant, and therefore limits the environmental consequences should there be an accident at sea.

'FOR Systems were born from an alarming statement that 20,000 ships permanently circulate on our seas…without any access on board to easily and rapidly empty the cargo and bunker tanks in case of accident,' says the JLMD Ecology Group.

'The FOR Systems end complex and slow salvage processes by offering all-time, quick and standardised access to the cargo and bunker tanks for the salvage teams.'

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CMA CGM is the first container ship company to install the FOR System on its vessels; firstly, on a 13,300 twenty foot equivalent unit (TEU) vessel and then on a series of 8,500 TEU and 11,400 TEU vessels built in South Korea.

CMA CGM then participated in the analysis of the equipment, which resulted in JLMD taking steps to improve bunker tank piping as weaknesses in common piping interconnections (with relation to venting and overflows) could disrupt the recovery process and force salvage companies to drill through the deck or the hull to access each tank.

MARPOL Annex IV regulations have made great progress in moving tanks away from the vessel's hull, but, as a result, access to tanks in the event of an emergency has been made more complex. Also, many other incidents, such as valve or pipe failures or off-specification oil, can require time-consuming procedures to correct. Even small malfunctions can require discharge and loading operations which can take hours, or even days, to complete.

To install the FOR System, JLMD partially re-engineered the existing piping diagram of CMA CGM vessels which significantly improved the accessibility of the bunker tanks. Each incident or accident now has a proper recovery process which is in compliance with the FOR System installed, and this contributes to the vessels eco-safety.

As Ludovic Gerard, director of fleet and new construction for CMA CGM, explained: 'With the FOR System, JLMD is answering a need that is growing within the shipping industry for efficient post-accident technologies. Our teams have worked together with JLMD in order to perfectly adapt the system to the container ships' bunker tanks.

'This technological innovation is totally in line with CMA-CGM's environmental strategy. It is now onboard all our new vessels.'

The system has now been issued with a new class notation by certification agency **Bureau Veritas**, and it has been supported by the **Centre of Documentation, Research and Experimentation on Accidental Water Pollution (CEDRE)**.

'Ten years of research and development have been necessary for JLMD to develop the appropriate know-how now in compliance with the Bureau Veritas FOR System notation,' said Gilles Longuève, director of JLMD Ecologic Group.

'The new FOR System label granted by the certification agency confirms the efficiency and great potential of our technology. We have made sure we offer an effective, simple, tailor-made and immediately available solution for all maritime transportation players who wish to demonstrate their commitment to the environment.'

To date, 35 vessels have been equipped with FOR Systems, and JLMD Ecologic Group is looking to install the system on at least 10% of the global maritime fleet by 2015.