

Maritime Passive Safety drives the future of shipping towards eco safety

The Fast Oil Recovery System

New technologies offer efficient solutions to cope with environmental consequences of Accidents at sea.

The new principle of Corporate Social Responsibility adopted by more and more shipping companies gets awareness at the International Maritime Organization (IMO), with an historic shift to Goal-Based construction standards for newly built ships[i]. Such a new angle sets new goals to be achieved covering safety and environmental protection. It marks a major change in the global maritime approach to safety regulation reflecting a fundamental switch towards a Risk-oriented Approach.

In that respect accidental pollution becomes a significant environmental issue expecting technical solutions able to fully satisfy all shipping players as ship-owners, shipbuilders, authorities, insurers, class societies, flag administration.

The Risk-oriented Approach: switching from Eco Efficiency to Eco Safety

A newly created association, the Maritime Passive Safety (MPS) Association, gathers the international expertise to provide

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

the ship with permanent onboard equipments and the shipping companies, with proper information and adapted processes in order to mitigate the deep consequences of an accidental pollution.

Passive safety experts have notified the danger of current ship design when pollutant recovery operations have to be performed. Obviously the ship designs make great progress in Eco efficiency (Nox Sox, tratamento de água de lastro, anti fouling...) but a lack of knowl-

edge and consideration do not make such ships Eco Safe.

This Eco Safe notion has been a main topic for JLMD Ecologic Group during 10 years of analysis led by a Risk Based Approach. The French based engineering company is one of the leading founders of the Maritime Passive Safety association. JLMD, with the Fast Oil Recovery (FOR) System, contributes to fulfill the lack of "post-accident" equipments onboard in the event of incident. The FOR Systems are emergency pollutant recovery devices for cargo and bunker tanks that are installed directly onboard ships. Each cargo or bunker tank is permanently equipped with a minimum of two security circuits that are immediately accessible through dedicated connectors located on the ship's upper deck.

The FOR system: A smart solution to put shipping on the Eco Safety track

The FOR system indeed allows to "evacuate" the polluting cargo from the vessel, ensuring an immediate and easy way for the salvage team to connect to



two hoses and recover the cargo. Through one of the circuits, sea water is injected by the salvage team. The system is then following Archimedes' buoyancy principle, that oil, which is lighter than water, is propelled towards the top and entirely recovered via the other circuit. The FOR System enables bunkers to be rapidly recovered, thereby limiting the environmental consequences should there be an accident at sea. The system works with any kind of liquid pollutant.

"FOR Systems were born from an alarming statement that 20,000 ships permanently circulate on our seas at the time without any access on board to easily and rapidly empty the cargo and bunker tanks in case of accident," commented JLMD Ecology Group in a statement. "The FOR Systems end complex and slow salvage processes thanks to offering all-time, quick and standardized accesses to the cargo and bunker tanks for the salvage teams," it added.

CMA CGM, the Worldwide N°3 container ship player, has been the first to equip FOR systems onboard (13 300 TEU) then equipping also series of 8 500 TEU and 11 400TEU built in south Korea. CMA CGM led the analysis with JLMD enhancing bunker tanks piping diagram weaknesses due to common piping interconnection (venting / overflow) which will disrupt any recovery processes forcing salvage companies to drill through deck or hull to access each tank.

If the regulation made tanks' integrity great progress by moving the tanks away from hull (Marpol annex IV), unfortunately in event of emergency situations the tank accesses are now more complex. Furthermore beyond



major accidents (grounding, wreckage), any incident as valve or pipes failures or off specification oil loading turn into time consuming spare procedures to correct the situation. Discharging or loading operations can waste hours and sometimes days to face up to even small malfunctioning.

To easily integrate the FOR system as well as correct the disturbance due to unsuited piping diagram, JLMD re engineered partially existing piping diagram



of CMA CGM ships, increasing significantly the accessibility of the bunker tanks. Each incident or accident has now a proper recovery process compliant with the FOR system installed, making the ship Eco safe.

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 of all of our new vessels."

The Maritime Passive Safety: Partnering with shipping industry to lead a greener future

The system has been issued a new class notation by certification agency Bureau Veritas and has been backed by the 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 Systems notation," said **Gilles Longuève**, director of JLMD Ecologic Group.

"The new FORS label edited by the certification agency confirms efficiency and great potential of our technology. We have

made sure we offer an effective, simple, tailor-made and immediately available solution for all the players of maritime transportation who wish to demonstrate their commitment in favor of environment," he commented.

The new authorities' Risk Based Approach highlights the double objectives of the ship now to reach: Eco Efficiency and Eco Safety. The Eco efficiency is now well supported internationally to reduce the foot print of the ship during normal operation. It arises now the necessity to consider the Eco Safety of the ship when incident or accident occurs.

French based JLMD Ecologic Group expects to have its Fast Oil Recovery Systems (FOR) fitted to at least 10% of the interna-



tional maritime fleet by 2015. To date, 35 ships (bulkers, tankers, chemical product carriers, container ships and navy vessel) have been equipped with the FOR system.

JLMD Ecologic Group is represented in Brazil by BBLink exclusive agent for the FOR system . ■