

“A WHALE” VERSUS “FUTURA-SOS”

„A WHALE“, a tanker owned by Taiwan Maritime Transport Co Ltd (TMT) was currently converted into “the world’s largest oil skimmer” in a Portuguese ship yard by cutting narrow inlet slits into the hull behind the bow, some meters below the actual construction water line (see red marking in Fig. 1, left).

Company officials further claim that “A WHALE” is capable processing huge amounts of oil polluted water – specifications in a range of 15 to 21 Million gallons per day can be found in different media sources. Compared to the currently operating vessels in the Gulf region (largest oil skimmer has an intake of 4,000 gallons per day, total intake of the rescue operation since April 20: 28 Million gallons), these numbers seem to be outstanding.

Due to its length of 1100 feet, vessel’s seakeeping characteristics may allow operations in harsh sea, but since to oil skimming process is based on the very basic “hole-in-the-water” principle, sensible ratios of oil to water in the skimmed fluid mixture – and hence acceptable efficiencies – can only be achieved in calm water or very low sea states. TMT says the share of oil in the skimmed mixture of the “A WHALE” is 15-20% - this is a very optimistic value which is definitely unrealistic for operations in medium to harsh sea states. Furthermore, the large draft of the vessel does not allow skimming in shallow water regions.

Compared to the capabilities of the “FUTURA-SOS”, the “A WHALE” performance is not as outstanding as it seems. The “FUTURA-SOS” is based on a unique sophisticated but robust hydrodynamic principle with a background of several years of research work including extensive model tests. Considering the exemplary design (length of the autonomous skimming unit: 213 feet) in Fig. 1 (right) with an inlet opening of 1 ft by 33 ft and an operational velocity of 3 kn (i.e. fluid velocity at the inlet opening approx. 2.4 kn), 85 Million gallons of oil polluted water can be skimmed per day. This is 4 times as much as the “A WHALE” and 3 times as much as the total intake of the entire rescue operation so far.

In addition, the “FUTURA-SOS” is capable of efficient operations in calm water as well as rough seas up to significant wave heights of 3 m. Due to its low draft, the system can also operate in shallow water regions.

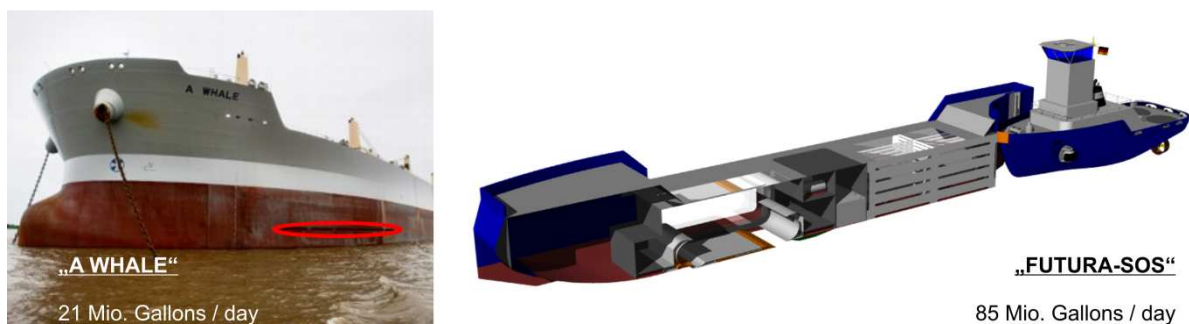


Fig. 1: Comparison of the oil skimming performance for “A WHALE” and the “FUTURA-SOS” concept