

## Case Study

# MBR Case Study Marine Sewage Treatment



## Fincantieri Placed the Order for the Delivery of the MBR Sewage Treatment Plant for the Italian Navy's new Aircraft Carrier "CAVOUR"

The Italian Ministry of Naval Defence have ordered a new aircraft carrier from Fincantieri for the Italian Navy. Construction of the new vessel, named "CAVOUR" was started in July 2004 and is scheduled for delivery in 2007. The vessel will enter service in 2008.

All sewage produced on board will be treated in four MEMROD® LT units that are installed at various locations in the engine room. In order to ensure proper performance of the MEMROD® LT membrane bioreactor, a flotation unit separates the oil and grease contained in the galley wastewater and solid matter is also removed from the wastewater. The effluent quality is significantly better than the specifications of the IMO-International Maritime Organisation (MARPOL, Annex IV) and USCG/Alaska rules. The MEMROD®-System also fulfils the future standards of MEPC.159(55).

Due to the specific operating conditions at sea, wastewater treatment systems for naval vessels must not only provide best performance, but also need to be designed in a manner that addresses the need for low noise emission and resistance to impact loads.

The ship has a standard displacement at full load of 27,100 t, an overall length of 244 m and a sustained speed of 27 knots. It can accommodate up to 1,210 people on board. A strong feature of the ship is its high operational flexibility. This carrier is also designed to transport wheeled and tracked vehicles for both military and civil missions.

Design data of the sewage treatment plant:

Capacity:	1,210 persons
Hydraulic load:	200 m <sup>3</sup> /d
BOD load:	140 kg/d