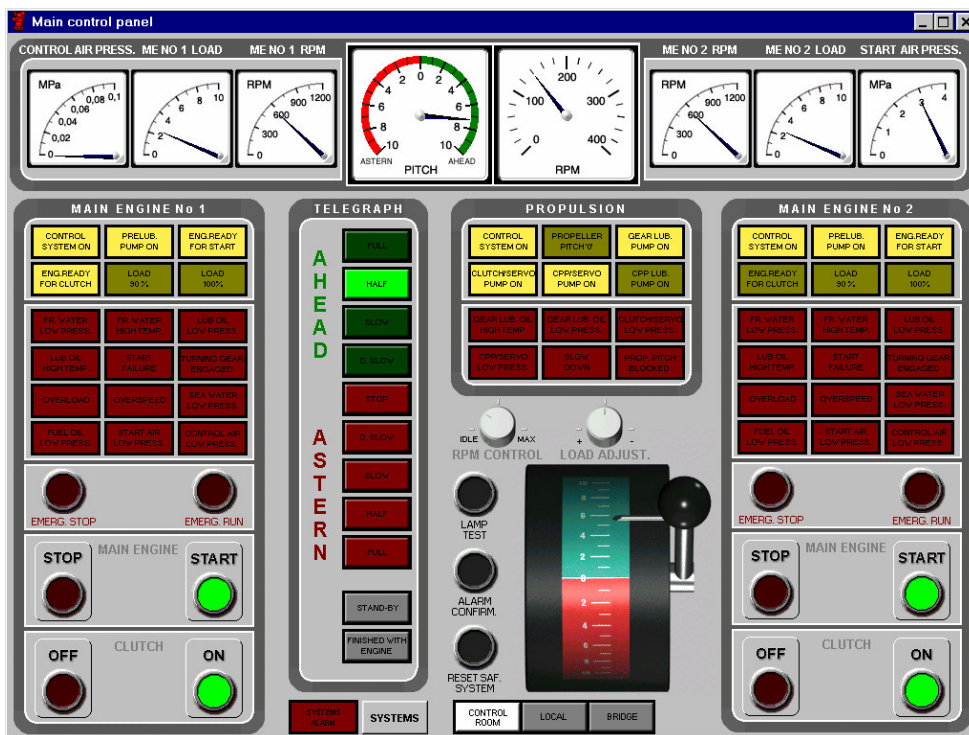


The PC-based Engine Room Simulator

Medium Speed Engine Room

Medium Speed Engine Room (MER) is a PC-based engine room simulator. All vital systems in a ship's engine room have been modelled and implemented. The multichannel digitised sound is fully comparable with the best simulators available today.



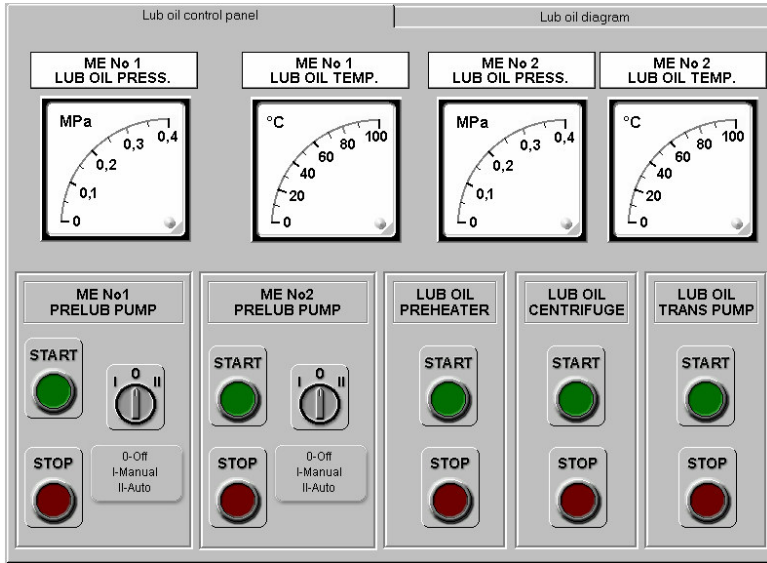
MER has been developed to comply with:

- STCW Code: Section A-1/12 and Section B-1/12.
- ISM Code: Section 6 and Section 8.

MER simulator model includes following systems:

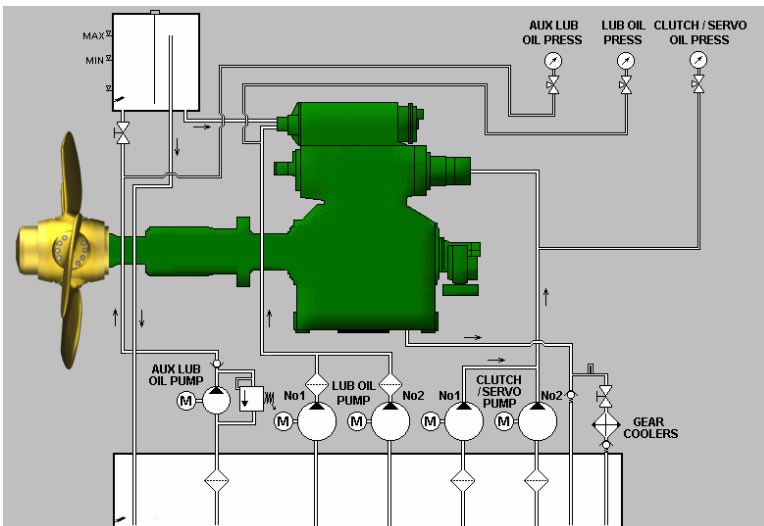
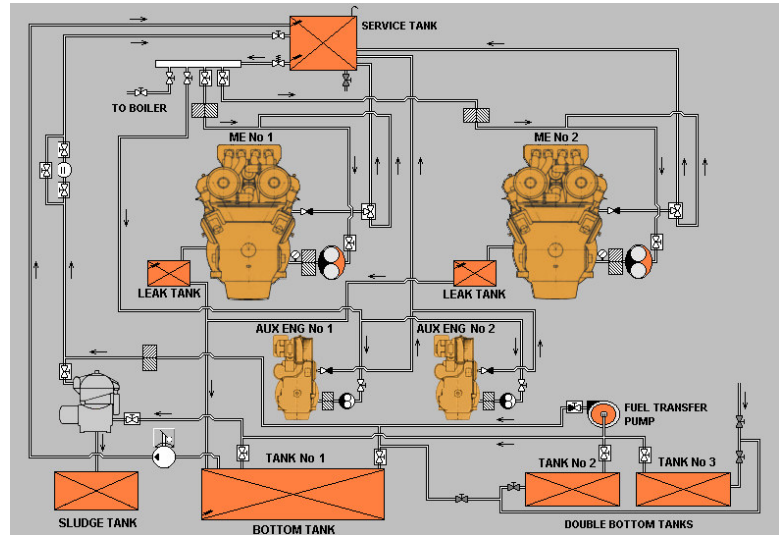
- Two main engines (4 stroke, medium speed, 16 cylinders, reduction gear, controllable pitch propeller).
- The fuel system (DO, including storage system and separator).
- The lubricating system (LO circulation and separator, LO storage).
- The cooling system (fresh water).
- The compressed air system.
- The power plant (2 diesel- and 1 emergency generator).
- The bilge system with oily water separator.
- The ballast system.
- The steering gear.

MER offers different types of a user interface:



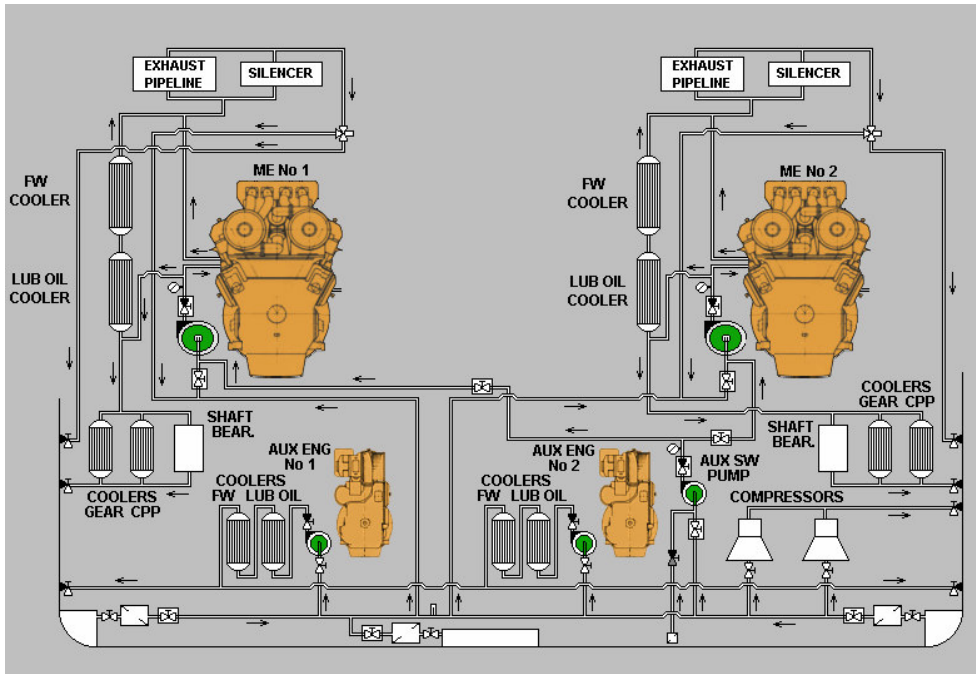
The control panels include very realistic, animated, virtual controls like switches, gauges and lamps. The control panels have to imitate the most important parts of the control room equipment.

The mimic diagrams present the layout of all vital engine room systems. They include active valves, animated status indicators and tank level gauges.

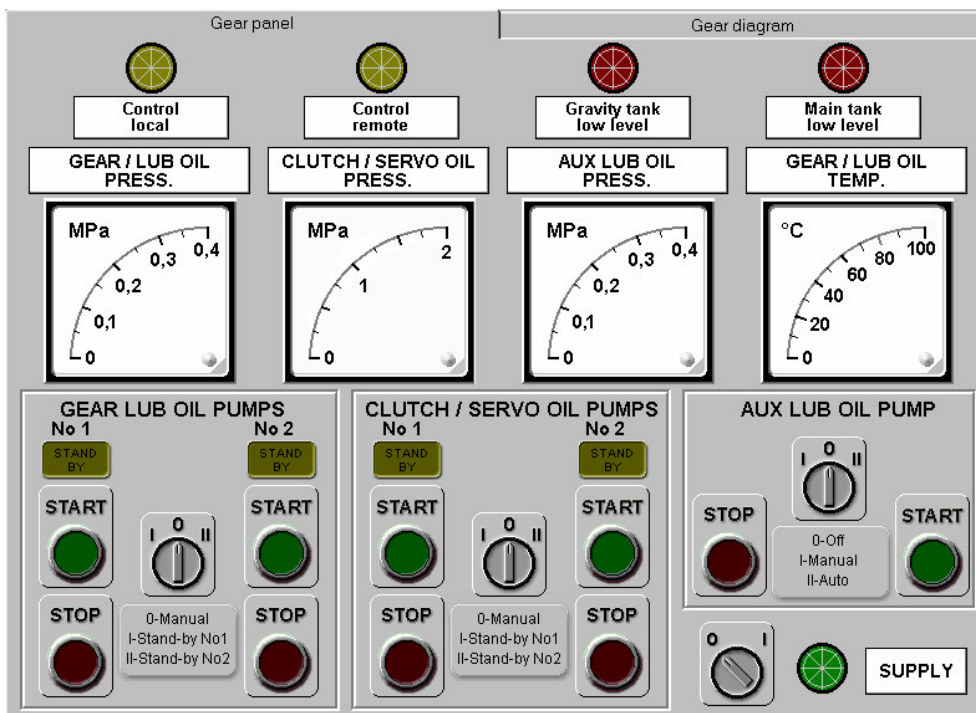


The animated controllable pitch propeller enables both: remote and local control.

The another examples of MER systems have been presented below:



The cooling system.



Reduction gear lubricating and control system panel

Here is a list of **MER** main features:

- **MER** is a highly realistic simulator for ship's engine room training which can also be used as a low cost introductory simulator.
- The mathematical model simulates a typical ship's engine room with two 4-stroke, medium speed engines, reduction gear and controllable pitch propeller.
- All vital auxiliary systems have been implemented.
- The user interface includes virtual controls and alarms and creates very realistic environment.
- The mimic diagrams with active valves, tank level indicators and selected digital gauges enable comfortable engine room operation and monitoring.
- Multichannel digitised sound provides a very realistic ships' engine room feel. The sound effects include: engine sound correlated with engine speed, the sound of a diesel generator starting and running, open indicator valve sound, alarm and machine telegraph buzzers.
- **MER** can co-operate with another personal computer connected in a local area network. This second machine will be used as an instructor terminal enabling the online monitoring of student activities, fault simulation and the telegraph communication between a bridge and an engine room.

The main *educational tasks* which can be accomplished using MER have been listed below:

- Learning ship's engine room typical operating routines.
- Ship's engine room operation training. The user will have the possibility to accomplish any operational task starting from different setups, both pre-prepared and saved by a user.
- Corrective action learning when faults occur. Different faults can be simulated and mixed in the run-time or loaded from disk.

