Type Approved to STCW 95

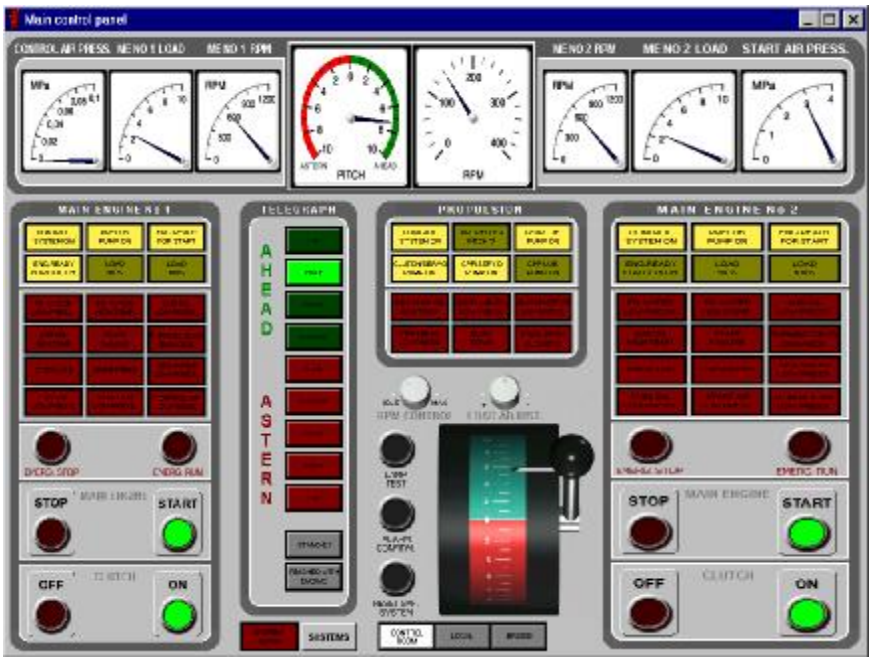
Medium Speed Engineroom

PC-Based Engineroom Simulator

Medium Speed Engineroom (**MER**) is a PC-based engineroom simulator. All vital systems in a ship's engineroom have been modelled and implemented. Its multichannel digitised sound is fully comparable with the best simulators available today.

MER is developed to comply with:

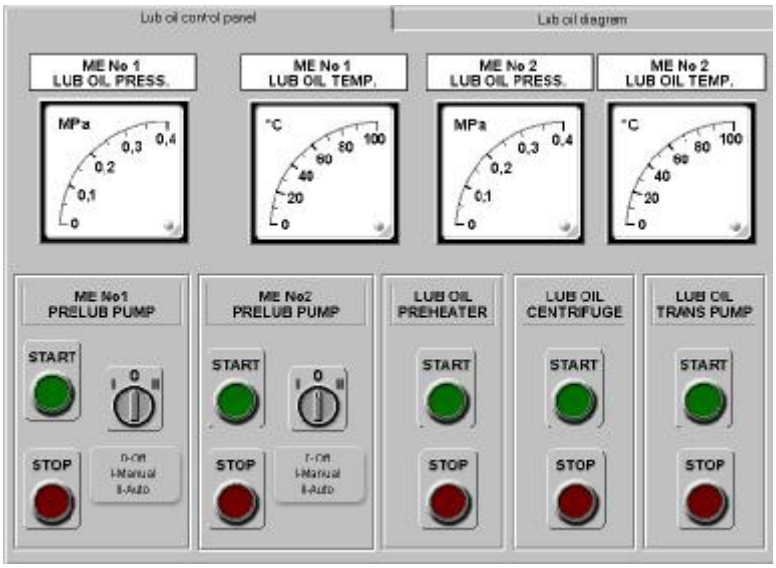
- STCW Code: Section A-1/12 and Section B-1/12.
- ISM Code: Section 6 and Section 8.



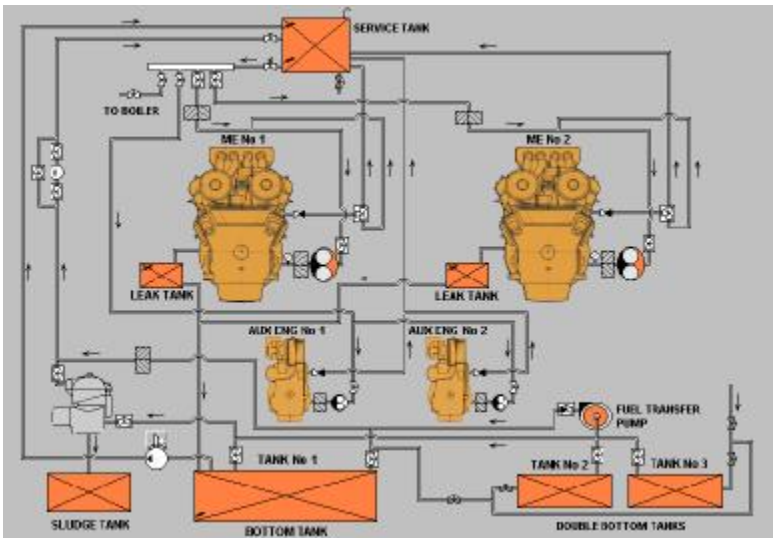
MER simulator model includes the following systems:

- Two main engines (4 stroke, medium speed, 16 cylinders, reduction gear, controllable pitch propeller)
- Fuel system (DO, including storage system and separator)
- Lubricating system (LO circulation and separator, LO storage)
- Cooling system (fresh water)
- Compressed air system
- Power plant (2 diesel and 1 emergency generator)
- Bilge system with oily water separator
- Ballast system
- Steering gear

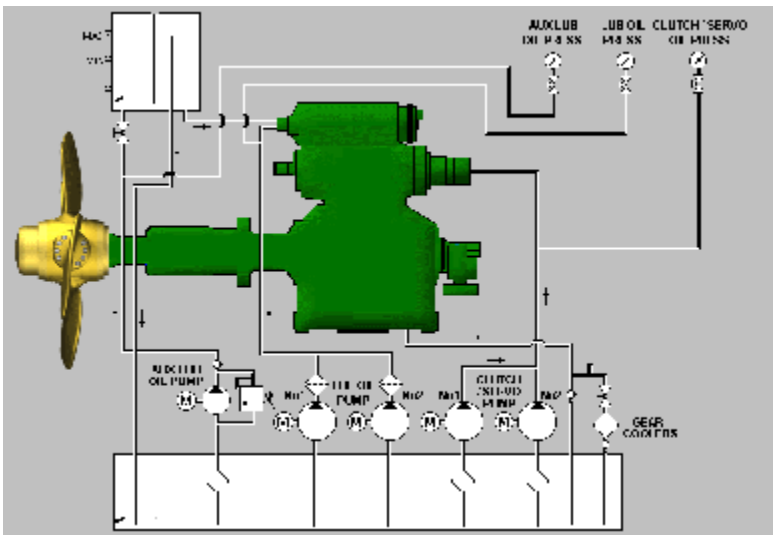
MER offers different types of user interface:



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

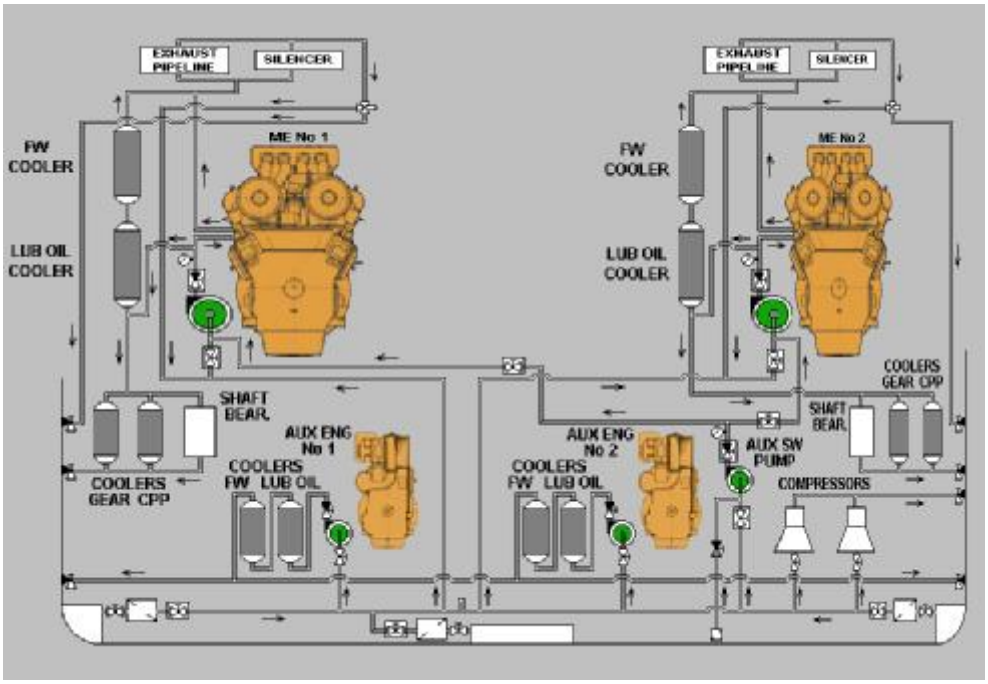


Mimic diagrams present the layout of all vital engineroom systems. They include active valves, animated status indicators and tank level gauges.

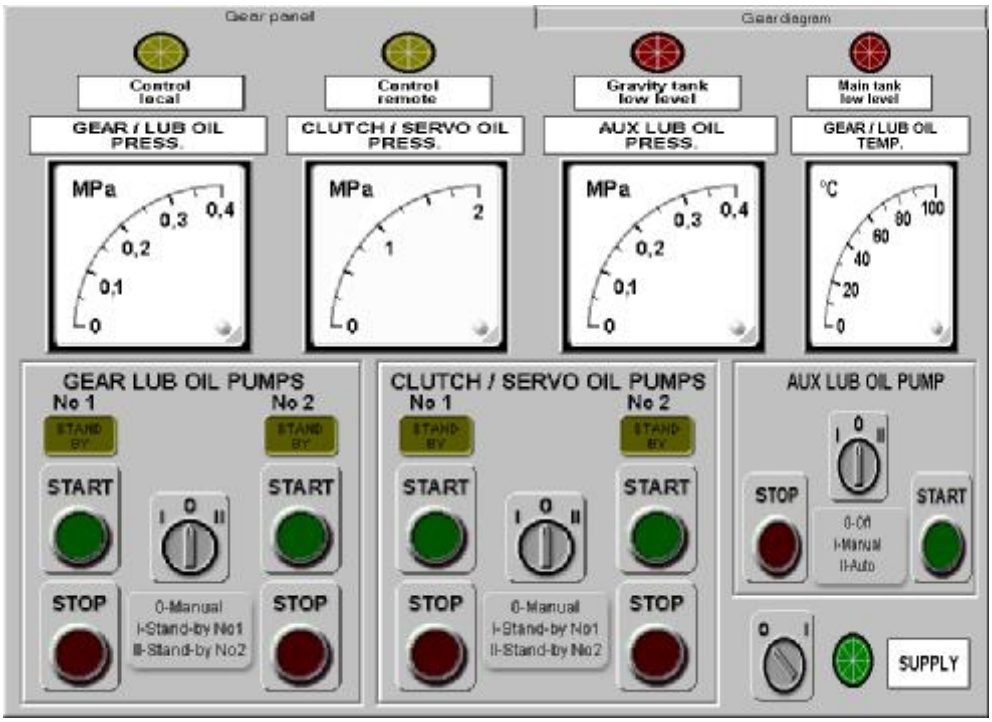


An animated controllable pitch propeller enables both remote and local control.

Other examples of **MER** systems are shown below.



Cooling system



Reduction gear lubricating and control system panel

MER's main features:

- **MER** is a highly realistic simulator for ship's engineroom training which can also be used as a low cost introductory simulator.
- The mathematical model simulates a typical ship's engineroom 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 a very realistic environment.
- Mimic diagrams with active valves, tank level indicators and selected digital gauges enable comfortable engineroom operation and monitoring.
- Multichannel digitised sound provides a very realistic ships' engineroom 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 would be used as an instructor terminal enabling online monitoring of student activities, fault simulation and telegraph communication between a bridge and an engineroom.

The main educational tasks which can be accomplished using MER:

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