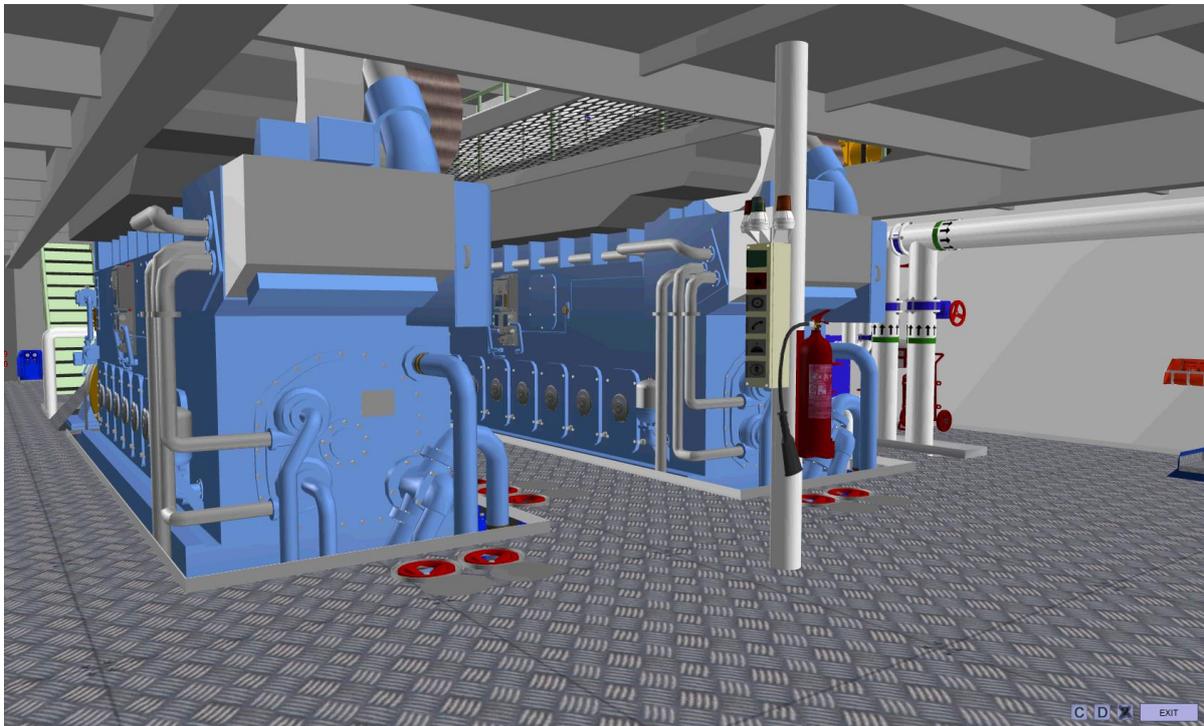




# Medium Engine Room Simulator - MER3D

## PC-based Engine Room Simulator

**MER3D** Engine Room Simulator is based on the Bergen diesel (Rolls Royce) C25:33 engines, typical of the Workboat industry and of medium-sized engine rooms. It consists of two four-stroke main engines with reduction gear and controllable pitch propeller and two diesel engine generators.



**MER3D** is designed to train students at maritime academies and marine vocational training centres. The simulator has universal features and may be used to train both merchant and naval personnel.

The main purpose of the simulator is to prepare the trainee for engine room operation, particularly:

- familiarization with basic engine room installation (compressed air system, fresh and sea water cooling system, lubricating and fuel oil system, gear and CPP hydraulic system)
- acknowledgment of main engine and auxiliary equipment starting procedures
- propulsion system manoeuvring (main engines, reduction gear, CPP)

**MER3D** has been developed to comply with:

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

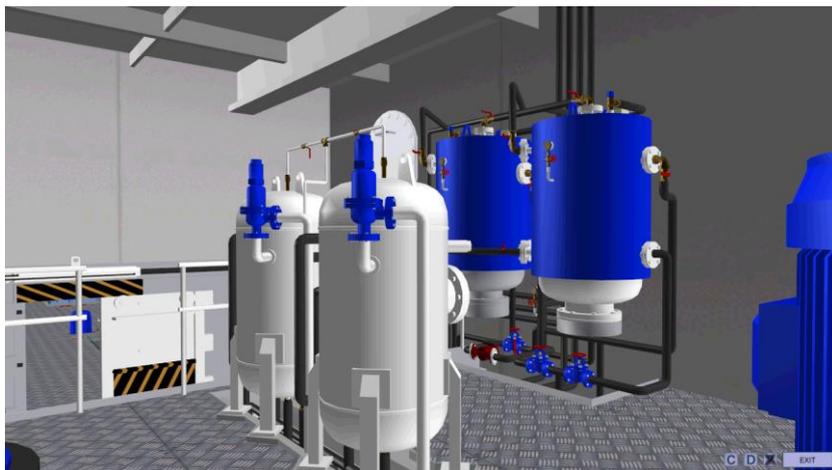
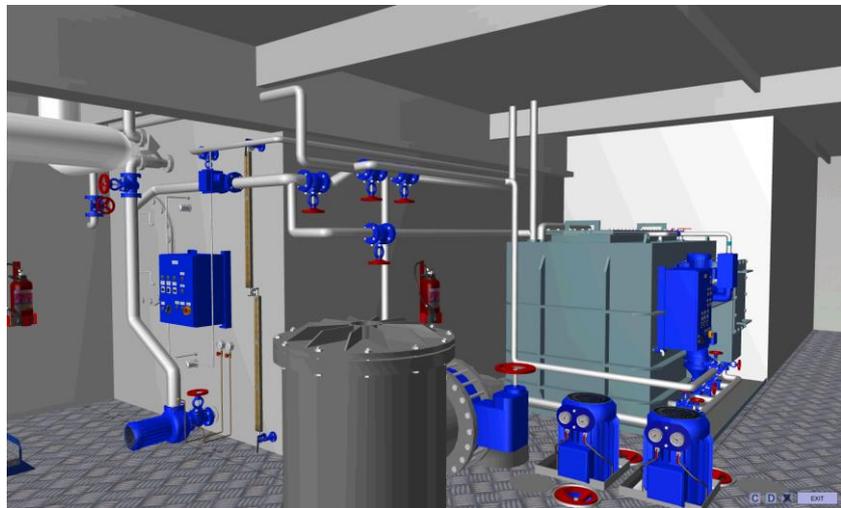


The simulator provides a 3D model of the engine room based on real equipment, and it generates realistic 3D sound which can be heard on two, four or more speakers.

# Medium Engine Room 3D (MER3D)

<http://www.pcmaritime.com>

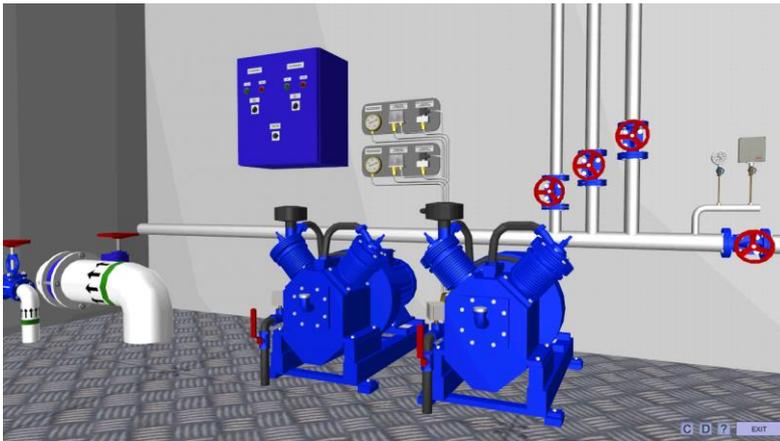
PC Maritime



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<http://www.pcmaritime.com>

MER3D simulator includes the following systems:

- Fuel System
- Cooling & Fire System
- Lubricating System
- Compressed Air System
- Power Plant
- Emergency Generator
- Sanitary Water System
- Bilge System
- Steering Gear
- Sewage Treatment Plant
- Air Conditioning Plant
- Water Mist System
- CO2 System
- Reverse osmosis system
- Hot water boiler
- Refrigerating Plant



The 3D model has very realistic animated virtual controls like switches, gauges and lamps.

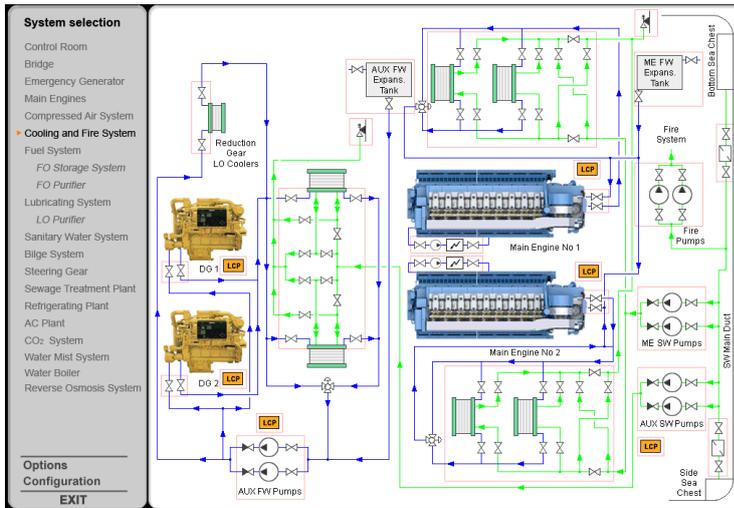
The Electric Power Plant is equipped with a modern Power Management System which enables automatic control of generators according to actual power demand.



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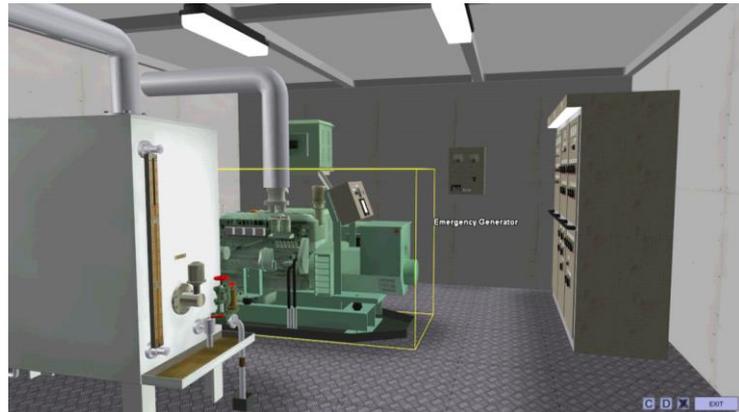
Mimic diagrams enable zooming into selected parts of the engine room.

Control room allows remote control of engine room equipment from computers.



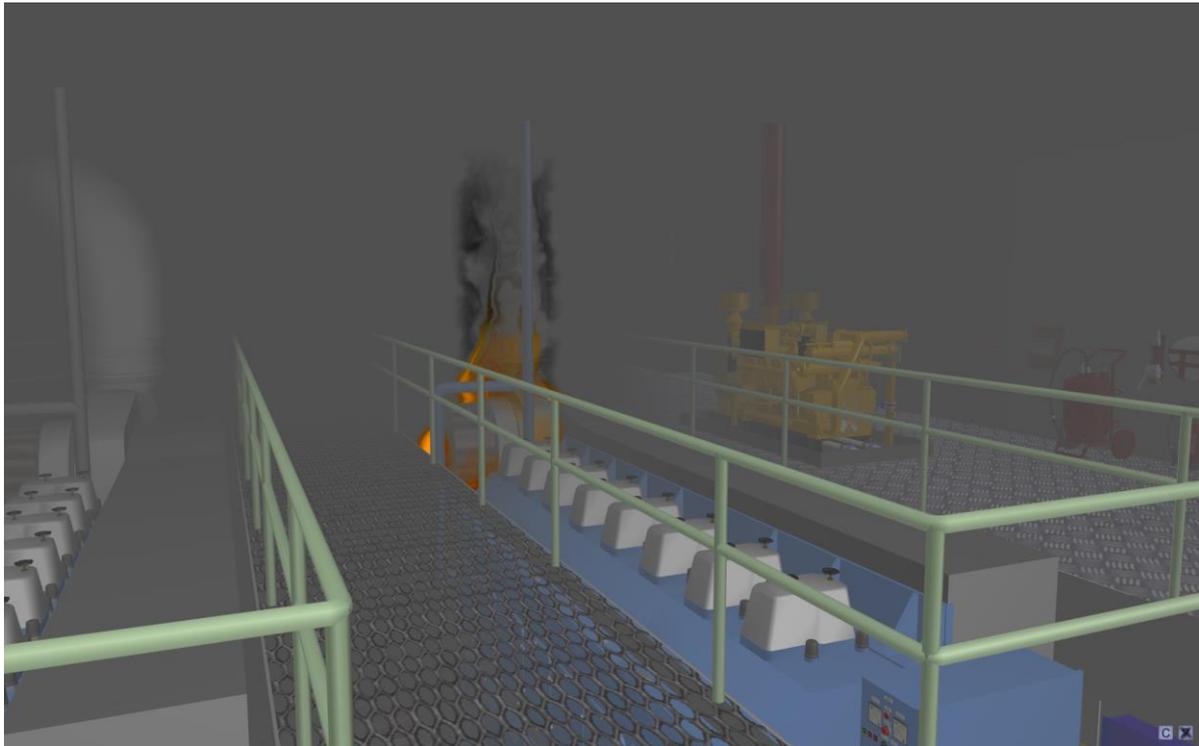
The control panels imitate the most important parts of the control room equipment.

Zoom technique allows easy navigation around the 3D environment and quick access to details.



### MER3D main features

- MER3D is a highly realistic simulator for ship's engine room training. It 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, driving a controllable pitch propeller through reduction gear.
- All vital auxiliary systems have been implemented.
- The user interface contains virtual controls and alarms to create a very realistic environment.
- The 3D virtual reality with active valves, tank level indicators and selected digital gauges enables comfortable engine room operation and monitoring.
- Multichannel digitized 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.
- Emergency procedure training including fire simulations



The main educational tasks which can be accomplished using MER3D 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.