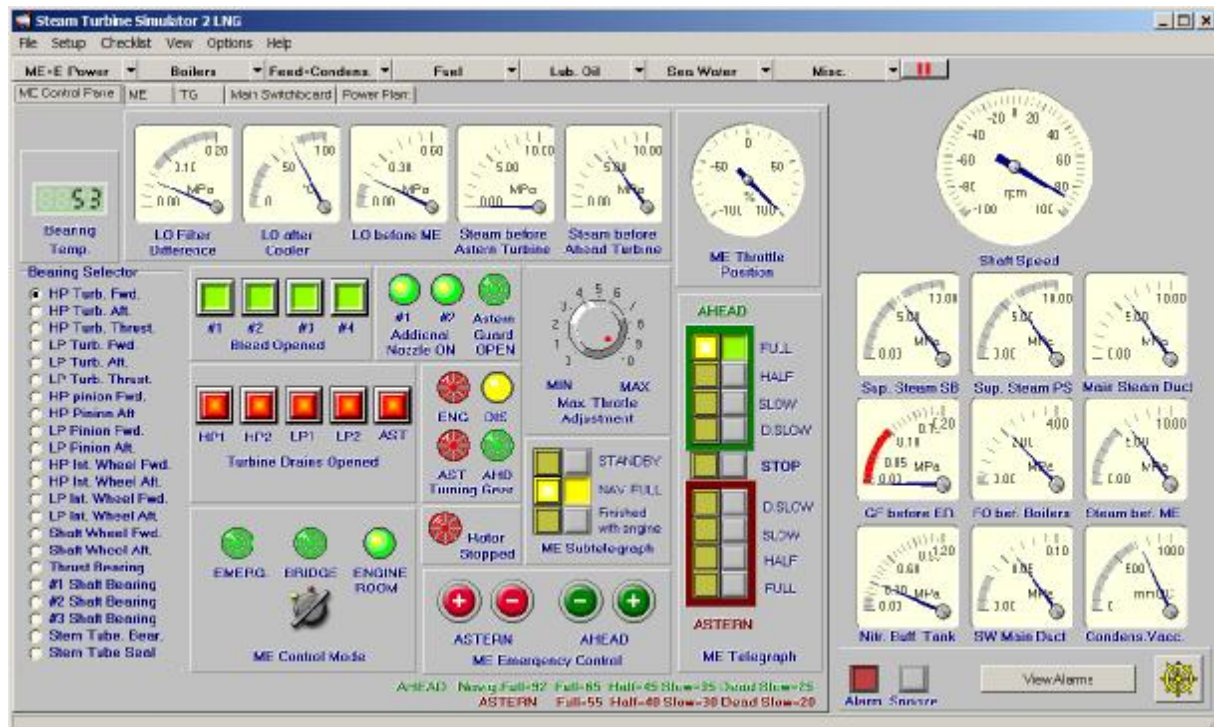# Steam Engine Room 2 LNG
PC-based Steam Engine Room Simulator

Steam Engine Room 2 LNG (SER2) is a PC-based full mission engine room simulator. All the systems in a ship's engineroom have been modelled and implemented. The multichannel digitised sound is fully comparable with the best simulators available today.

SER 2 LNG has been developed to comply with:
- STCW Code: Section A-1/12 and Section B-1/12.
- ISM Code: Section 6 and Section 8.

SER 2 LNG simulator model includes:
- Main engine (steam turbine, two main boilers, fixed pitch propeller).
- Fuel system (DO, HFO and Gas Fuel including the storage system).
- Lubricating system (LO circulation and separator, LO storage).
- Cooling system (sea water).
- Feed and condensate system.
- Power plant (2 turbo generators, 1 diesel and 1 emergency generator, power consumers).
- The bilge system with oily water separator.
- The ballast system.
- The steering gear.
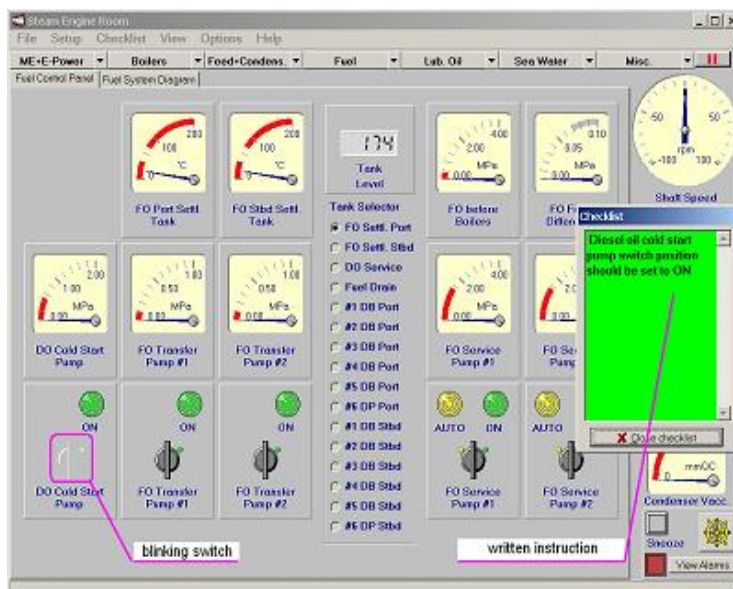
Steam Engine Room 2 LNG

PC Maritime

http://www.pcmaritime.co.uk

SER 2 LNG offers different types of user interface:
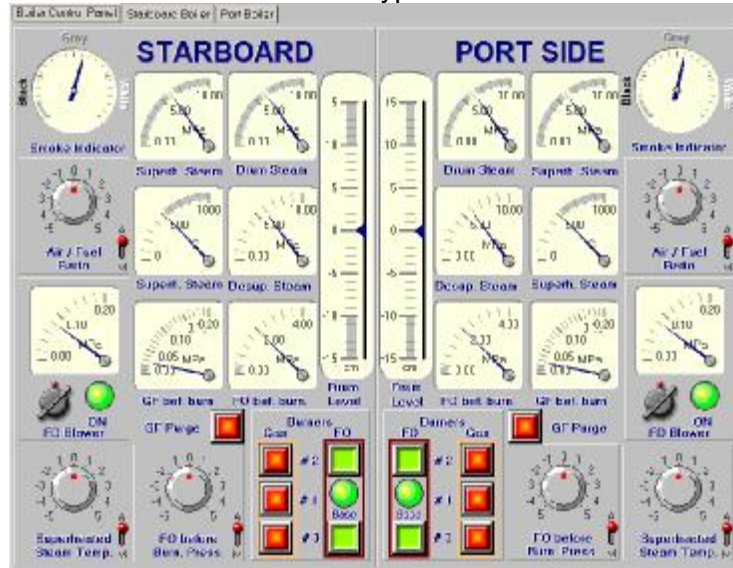
Control panels include very realistic, animated virtual controls like switches, gauges and lamps. The control panels imitate the most important parts of the control room equipment.


The green **Checklist window** shows instructions relevant to the selected checklist.
The appropriate system window will always open when a new checklist step is shown in the checklist window.
The control lamp, switch or gauge specified in the checklist step "blinks" in order to make it easier to identify.
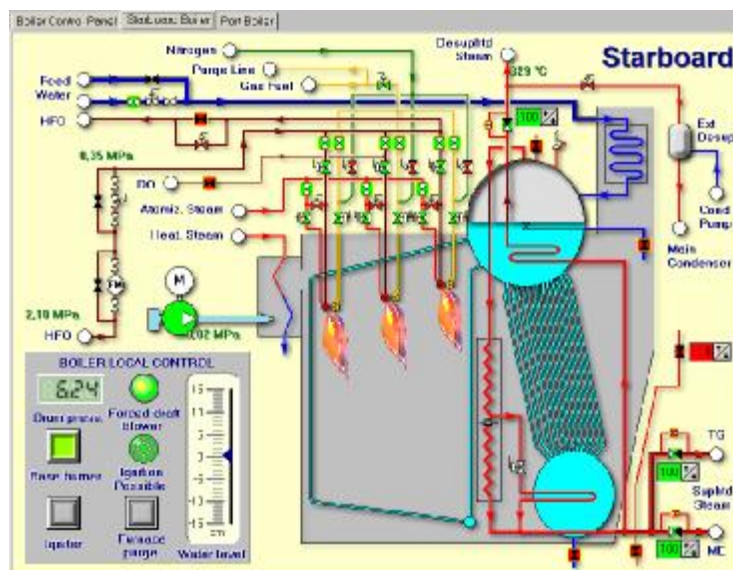
Animated panels with different gauges offer easy access to all necessary information.

Other examples of **SER 2 LNG** features are shown below:
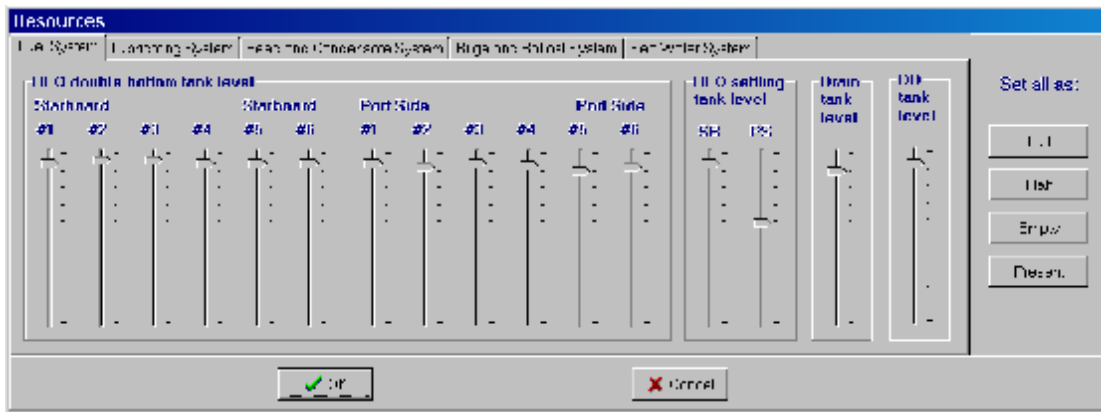
Vertical scrollbars enable monitoring and manipulation of the corresponding resources. Three buttons (Full, Half, Empty) on the right enable quick **setting of all resources.**

A scenario is a chain of events that introduce or remove faults from the engine room operation. Each event is identified by:

- Fault name (selected from the given list).
- Fault delay (the delay in seconds between the prior event and the current one).
- Simulation (no fault, stable fault, unstable fault).

The scenarios can be played and edited with a help of a **scenario editor**.
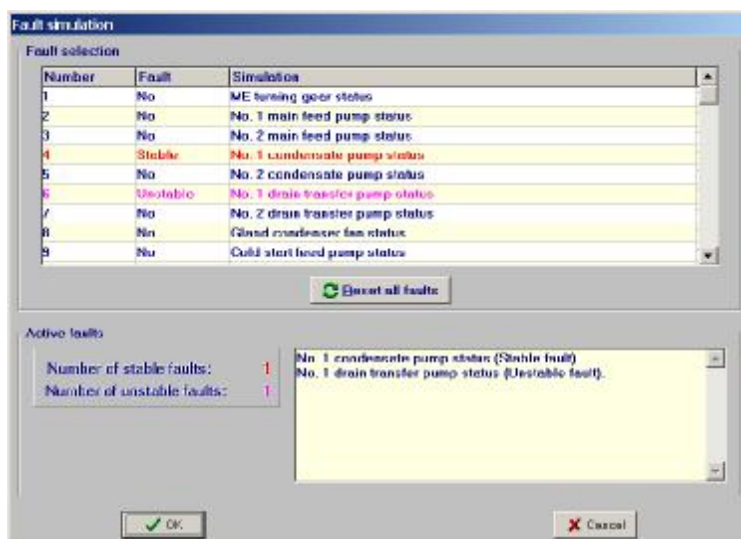
The **Fault Simulation window** contains a list of all available simulations and their status, which can be monitored and changed.

There are 3 possible states for each fault simulation:

- No fault.
- Stable fault.
- Unstable fault.

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Here is a list of **SER 2 LNG** *main features*:

- **SER 2 LNG** 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 a steam turbine, its auxiliary systems, power plant, bilge and ballast system.

- The user interface includes all virtual controls and alarms and creates a very realistic environment.

- Mimic diagrams with active valves, pump status indicators, tank level indicators and selected digital gauges make the system easy to use.

- **SER 2 LNG** includes fully integrated checklists for stand alone learning.

- Multichannel digitised sound provides a very realistic ship's engine room feel. The sound effects include: propeller shaft sound correlated with engine speed, open starting valve sound, alarm and machine telegraph buzzers. The volume level for all sound channels can be freely selected according to personal preferences.

- The software is available with a desktop hardware console.

- **SER 2 LNG** can co-operate with another PC connected in a local area network. This second PC can be used as an instructor terminal enabling online monitoring of student activities, fault simulation and telegraph communication between bridge and engine room.

- **SER 2 LNG** offers easy switching between the metric and American unit systems.

The main educational tasks which can be accomplished with **SER 2 LNG** are:

- Learning typical ship's engine room operating routines.

- Ship's engine room operation training. The user will be able to accomplish any operational task starting from pre-prepared or previously saved exercises.

- Training in corrective action when faults occur. Different faults can be mixed in the run-time or loaded from disk.