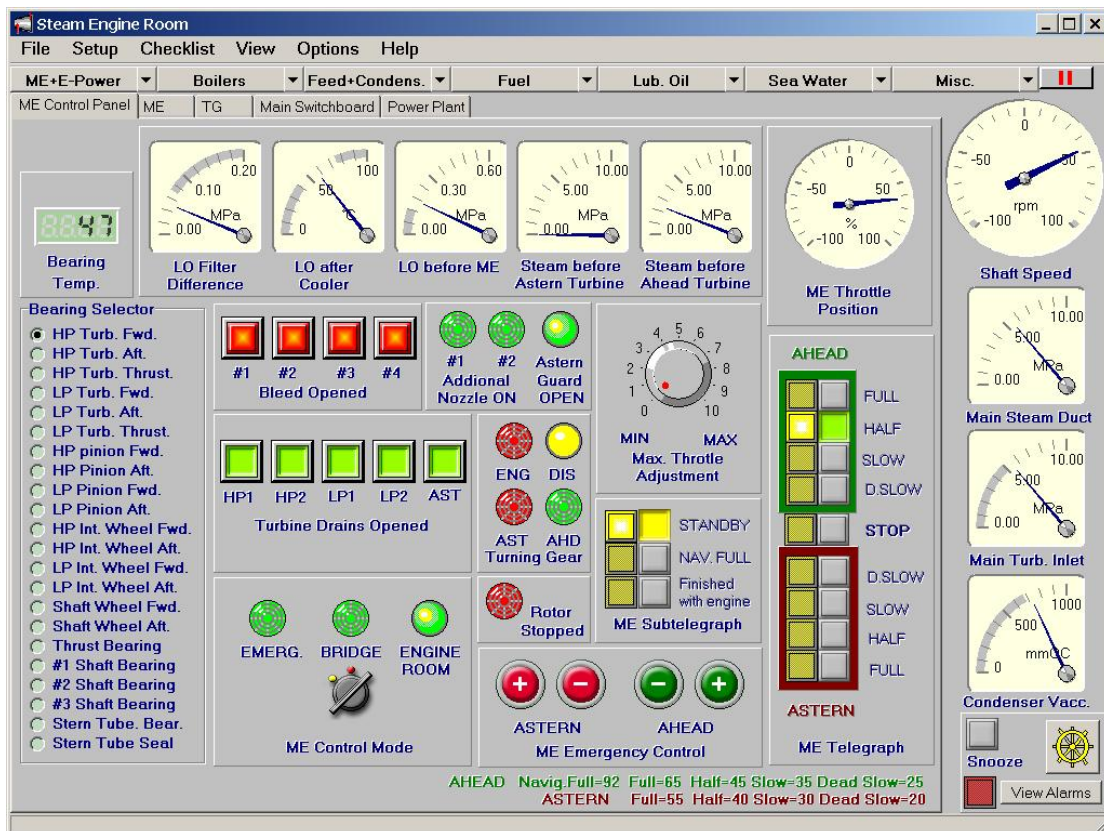




The PC-based Steam Engine Room Simulator

Steam Engine Room

Steam Engine Room (SER) is a PC-based full mission engine room simulator. All the 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.



SER has been developed to comply with:

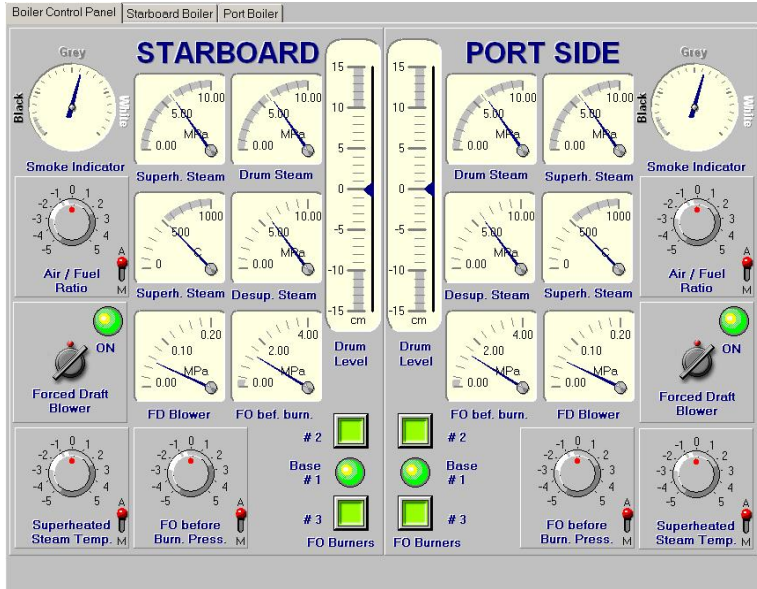
- STCW Code: Section A-1/12 and Section B-1/12.
- ISM Code: Section 6 and Section 8.

SER simulator model includes following systems:

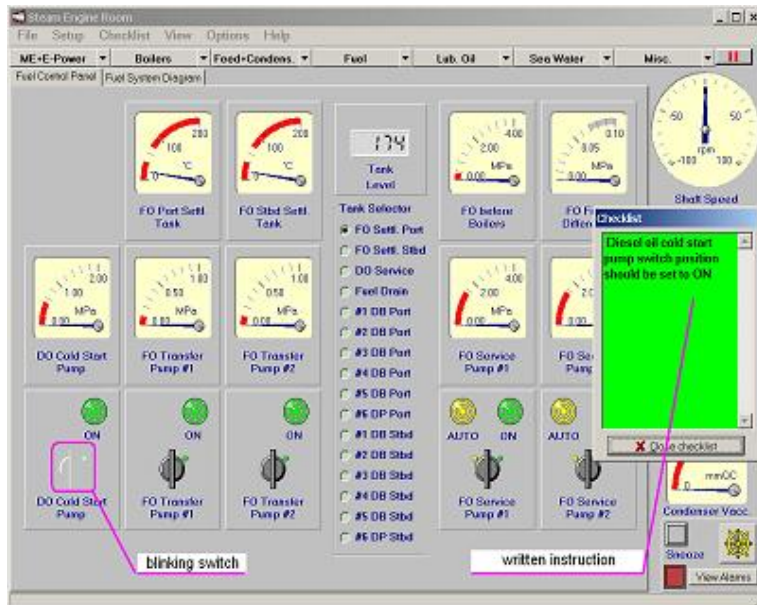
- The main engine (steam turbine, two main boilers, fixed pitch propeller).
- The fuel system (DO and HFO, including storage system).
- The lubricating system (LO circulation and separator, LO storage).
- The cooling system (sea water).
- The feed and condensate system.
- The power plant (2 turbo generators, 1 diesel-, and 1 emergency generator, power consumers).
- The bilge system with oily water separator.
- The ballast system.
- The steering gear.

Steam Engine Room

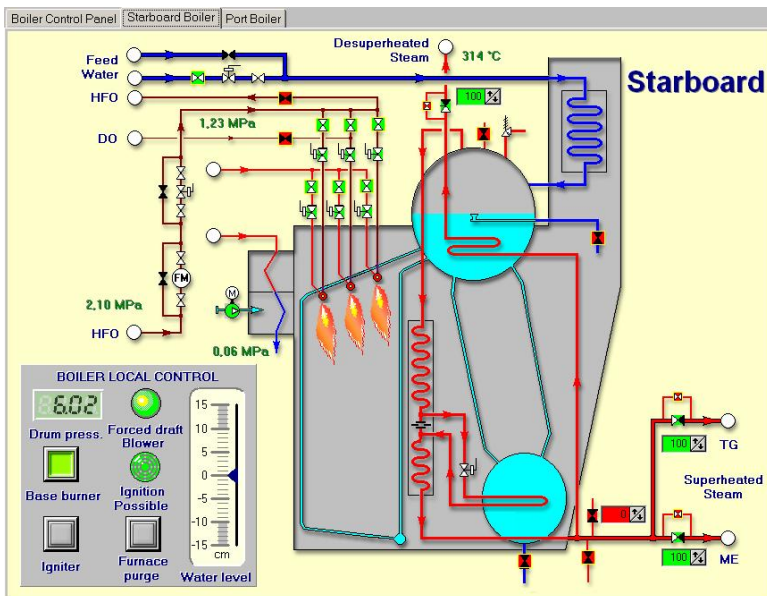
SER offers different types of user interface:



The 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.



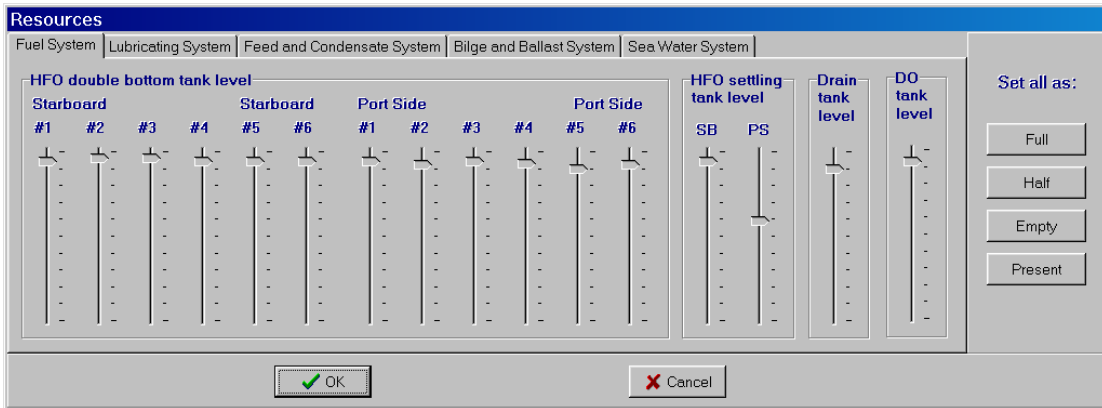
The green **Checklist** window shows instructions relevant to the selected checklist. The appropriate system window will always open when a new checklist step is shown in the checklist window. The control lamp, switch or gauge specified in the checklist step “blinks” in order to make it easier to identify..



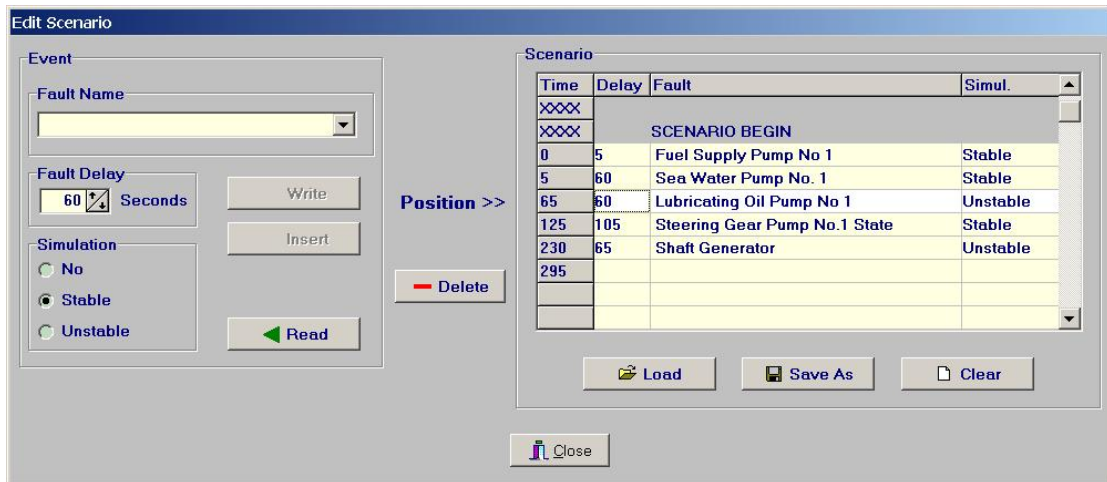
The animated panels with the mixed kinds of the gauges offer an easy access to all necessary information.

Steam Engine Room

Other examples of **SER** features are shown below:



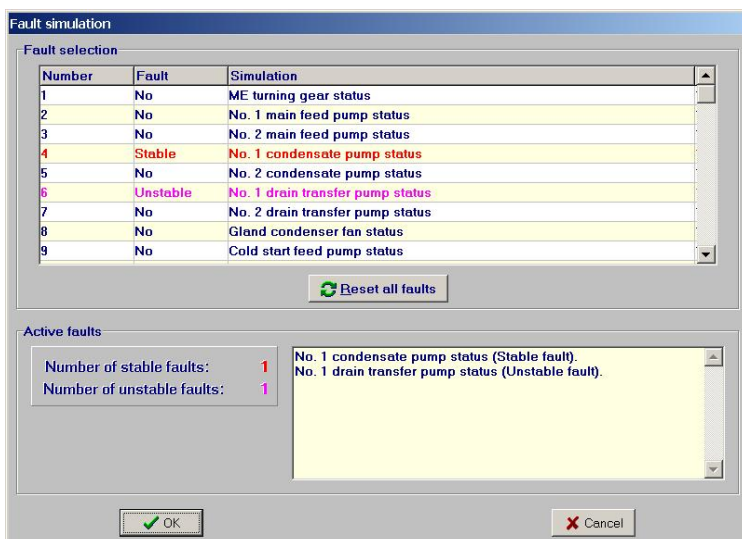
The vertical scrollbars enable monitoring and manipulation of the corresponding resources. Three buttons (Full, Half, Empty) on the right enable the quick **setting of all resources**.



A scenario is a chain of events that introduce or remove faults from the engine room operation. Each even is described by the following properties:

- 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 both played and edited with a help of a special **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.

Steam Engine Room

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

- **SER** 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** 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 based **SER** simulator is available with a desktop type, hardware console.
- **SER** 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 a bridge and an engine room.
- **SER** offers an easy switching between the metric and American unit systems.

The main *educational tasks* which can be accomplished with **SER** are listed below:

- 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.

For further information please contact: