

Engine room simulator



The noise in the large engine room is normal. The main engine is thudding, the generators are making a noise and the whistling sound of the turbo chargers penetrates the ear protection. Suddenly the red warning light goes on and a siren begins to wail above all other sounds. Various lights flicker on the large control panels. Then another bright, flickering light goes on: the telephone. On the other side, the chief mechanic in the control room gives a resolute instruction: 'Decrease the number of revolutions of the main engine on the local control panel to 40 rpm and activate the auxiliary cooling water pump; the main cooling water pump is not functioning properly.' Quickly the operator starts performing a number of actions that must be done in a particular sequence.

The engine room simulator (MR) is one of the most impressive simulators controlled by the STC-Group. In the centre of the STC building is a large space in which the engine room of a large tanker has been replicated. This is linked to a control room that is provided with all instruments. The courses for advanced learners take place here. The Transport, Public Works and Water Management Inspectorate (Dutch: Inspectie Verkeer en Waterstaat) has approved the course programs and the simulator as the only one in the Netherlands for the most advanced courses prescribed by the STCW Agreement.

¹ International agreement concerning standards for seafaring instances regarding training, certification and watch keeping. STCW stands for Standards of Training, Certification and Watchkeeping.



The set-up and appearance of the engine room simulator strongly resembles the real situation on modern ships. What was happening in the above-mentioned simulated situation? Was the problem dealt with quickly and sufficiently? Was the instruction carried out correctly? These are questions that can be analysed thoroughly by means of a record and the automated evaluation of the exercise.

Workstation simulator

As explained above, the STC-Group works with a full-mission engine room simulator and various sectional task simulators. The sectional task simulator with wall display has simulations of various engine rooms varying from that of a fishing ship or an inland navigation ship to that of a large tanker or an engine room with a diesel-electric drive. On the simulator, the learner learns how the various systems in the engine room are related, how he can operate them and what the consequences are if he makes mistakes. He gains an insight in output electronics, working with high voltages and solving failures. These simulations actually involve real, specific problems of the various engine rooms. The complexity of the processes in the real engine room is fully captured in the simulators.

Teamwork

It is also possible to practise teamwork. For this, the STC-Group has a separate in-house simulation program. The whole engine room is displayed on a large wall display. Four operators can operate the engine room together. Each of them has his own panel, but they need each other to build up the engine set-up. A chief mechanic sits in the control room and communicates with the learners. This form of simulation is particularly exclusive; there are but two simulators in the world, one of which is in Rotterdam, the Netherlands that offer this program.

Full mission

The full-mission engine room simulator is unique in its kind. This simulator is a copy of a real engine room. With this, the STC-Group presents Engine Room Resource Management (ERRM) courses to experienced ship mechanics. Their shipping companies send them for training to learn to work as a team, under stress and in difficult situations. Proper division of tasks is very important here. An ERRM simulation run takes about half an hour and is recorded on videotape. Afterwards, the tape is played and the exercise is evaluated. The simulations that are done are difficult situations that may occur in actual practice, but which cannot be practised in a real engine room.

Further information

For further information about this and other simulators, you can contact STC B.V. STC B.V. is a subsidiary division of the STC-Group and responsible for non-subsidised activities. STC B.V. provides standard courses as well as courses that are tailor-made for your industry. Included in STC B.V. are the contract education division of the Shipping and Transport College, Maritime Simulation Rotterdam B.V. (MSR), Dynamar Consultancy B.V. and the International Maritime Transport Academy (IMTA).

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