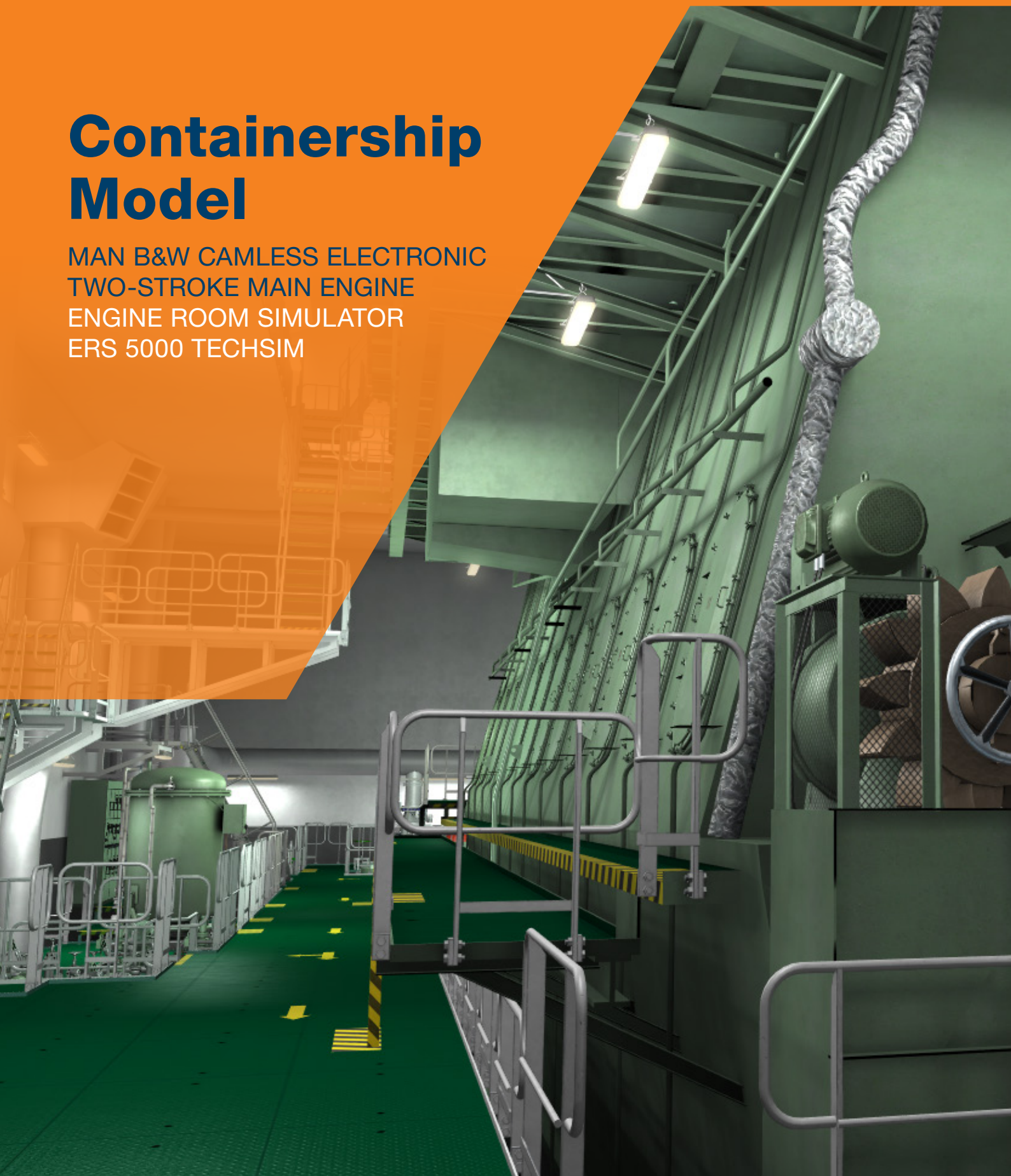


Containership Model

MAN B&W CAMLESS ELECTRONIC
TWO-STROKE MAIN ENGINE
ENGINE ROOM SIMULATOR
ERS 5000 TECHSIM



Containership Model

Engine Room Simulator ERS 5000 Techsim

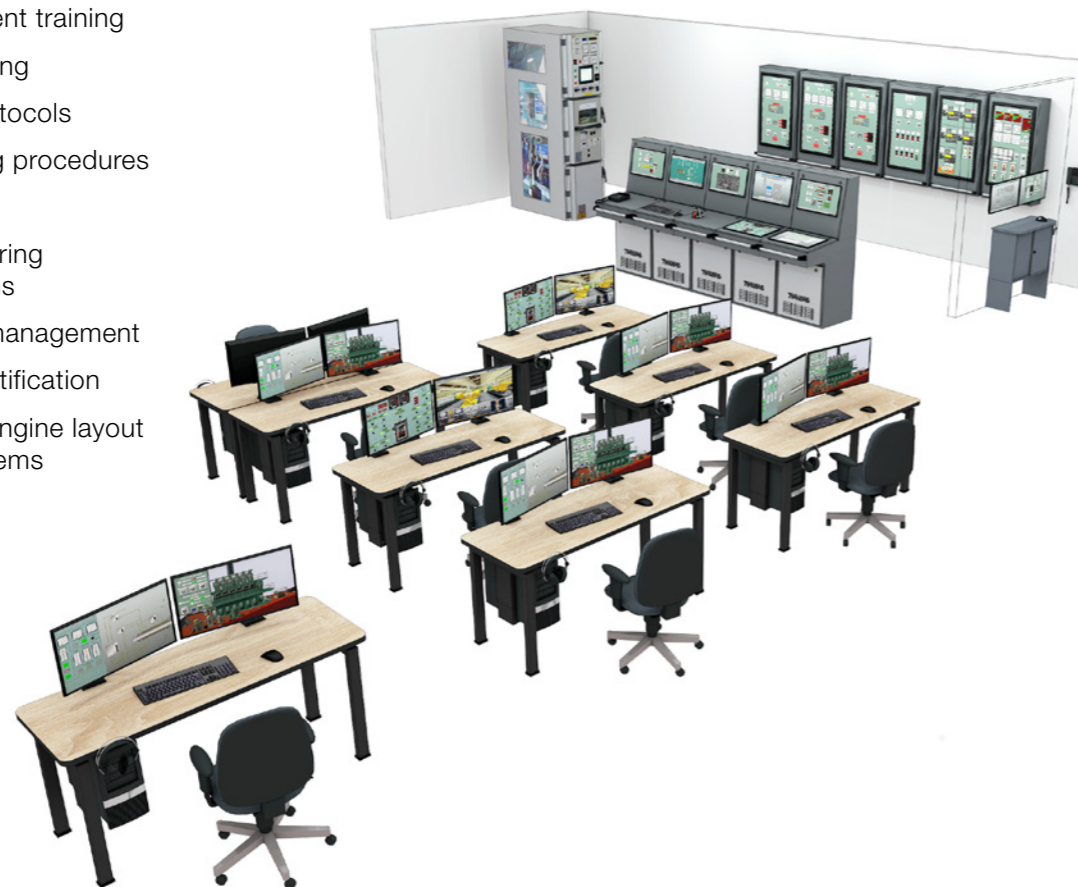
The CONTAINERSHIP Engine Room Simulator, featuring the MAN B&W camless electronic two-stroke Main Engine, allows Marine Engineers, Officers and Technicians to master the principles of operation and fault diagnosis of engineering and electrical systems.

Training Objectives

- Familiarization with Engine Room equipment
- System layout and flow diagrams
- Control of the machinery
- Control system and automation
- Alarm and safety system
- Watch-keeping and troubleshooting
- Emergency operations
- Emission control and fuel economy management
- Energy management
- Vessel resource management

Configurations: Solo, Classroom and Full Mission

- Principles of operation
- Advanced operations
- Resource Management training
- Human Factors training
- Communications protocols
- Emergency operating procedures
- Troubleshooting
- Diagnosis of engineering and electrical systems
- Machinery disaster management
- Final training and certification
- Familiarisation with engine layout and automation systems



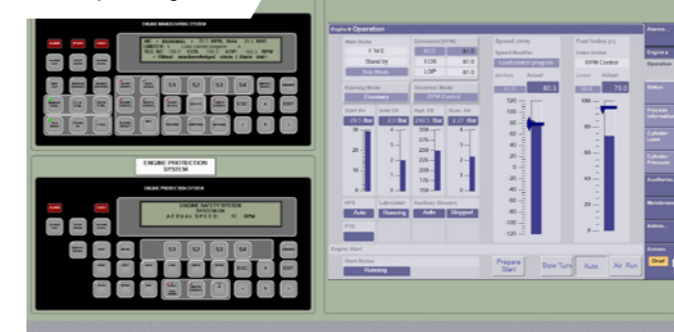
Compliance with International Standards and Regulations

- Covers the essential areas of maritime training in full compliance with the STCW 2010 requirements
- Designed to meet the requirements of IMO Conventions and Resolutions and IEC standards
- Developed in accordance with DNVGL-ST-0033 Maritime Simulator Systems standard
- Statement of product quality according to the NK Standard for Certification of Maritime Education & Training Simulator Systems based on the latest STCW requirements and corresponding IMO model courses

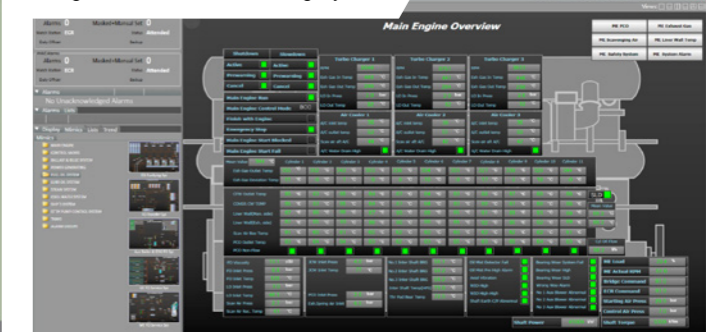
Features and Benefits

- Main Operating Panel (MOP) allows control and troubleshooting on the Main Engine.
- A refined user interface allows to navigate to the Integrated Control Monitoring System (ICMS) pages, 3D scenes and Local Operating Panels (LOPs).
- Realistic 3D visualisation allows the trainee to have a 3D tour of the entire engine room, operate as an avatar in a First Person View (FPV) and cooperate with other crew members.
- The first model to feature a full replica of Ballast Water Treatment System (BWTS), following the enforcement of the International Convention for the Control and Management of Ship's Ballast Water and Sediments (BWM Convention).
- The model allows for high voltage breaker key lock system simulation and joint operation with the navigational simulator.

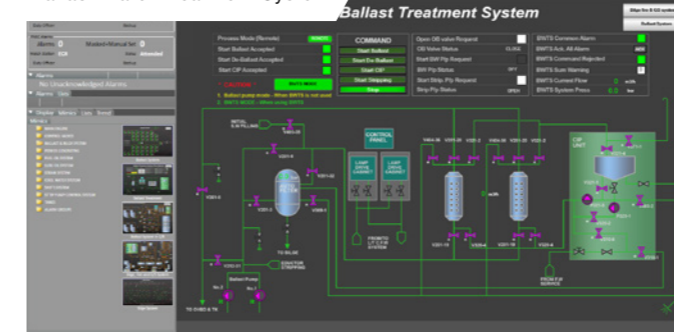
Main Operating Panel



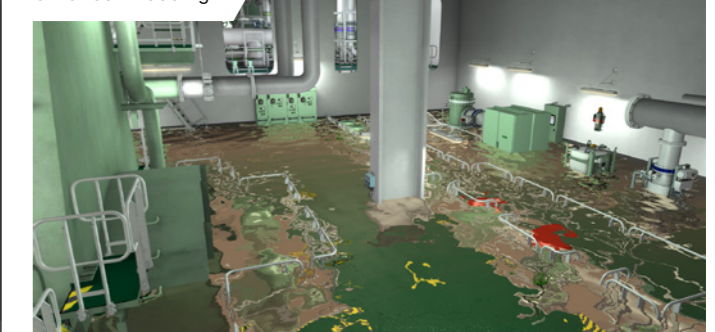
Integrated Control Monitoring System



Ballast Water Treatment System



3D effect: flooding



Vessel

- Length: 397m
- Breadth: 54m
- Dead weight: 185,000 t
- Service speed: ~23.5 knots at 90% MCR

Propulsion

- MAN B&W 11S90ME-C 9.2
- 2 strokes, slow speed, turbocharged
- MCR 63910 kW at 84 RPM – NCR 57519 kW at 81 RPM
- 6 blades Fixed Pitch Propeller

Electric Power Plant

- 2 x Diesel-Generators, Himsen type 8H32/40, 3800 kW, 6.6 kV, 3Ph, 60 HZ
- 2 x Diesel-Generators, Himsen type 6H32/40, 2800 kW, 6.6 kV, 3Ph, 60 HZ
- 1 x Emergency Diesel-Generator, 350 kW at 1,800 RPM, 440 V, 3Ph, 60 HZ
- Fully modelled HV, LV and emergency switchboards

Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

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