



WARSASH
MARITIME
ACADEMY

Choice, Heritage and Quality

The world's leading maritime
education and training provider

**Full Mission Engine
Room Simulator**



Welcome to Warsash Maritime Academy

We are proud to have pioneered the use of state-of-the-art simulators for training at the academy, and have been world leaders for several decades. We specialise in simulation training for bridge, engine, ship handling and liquid cargo operations.

Warsash Maritime Academy produced the world's first merchant navy engine room simulator some 30 years ago. Since then, we have continued to develop and introduce new courses that meet the ever-changing training requirements of the international shipping industry.

The set up and design of the new Full Mission Engine Room Simulator is first of its kind in the world, and it is backed by extensive experience of practical simulator training and academic application. It also reflects a focus that lies at the heart of many of our successful training programmes – namely, creating an atmosphere



within the simulator that as closely as possible recreates the conditions to be found in a real engine room environment on board a ship.

The Full Mission Engine Room Simulator, which was launched in October 2012, was officially opened by Mr Milhar Fuazudeen, Head of the Maritime Training and Human Element Section at the International Maritime Organisation (IMO), and reflects our continuing dedication to providing first-class maritime training and education.

Andrew Hair, Director

The Full Mission Engine Room Suite



Engine Control Room

Key features include touchscreen controls to operate and monitor propulsion and auxiliary systems through a Distributive Control System, fitted with real throttle controls and telegraph.

Engine Room

Key features include interactive 3D work stations with a 46" monitor and 22" touchscreen navigation panels, allowing delegates to navigate through a photorealistic engine room, corresponding to the ship model in use, and interact with equipment and systems.

Emergency Switchboard Room

Key features include a real switchboard, real circuit breakers and a touchscreen monitor displaying the emergency generator and battery back-up systems. The touchscreen is used to stop and start the emergency generator and carry out monitoring and fault diagnosis using a virtual toolbox.

High Voltage (HV) Room

Key features include a real 11kVA switchboard section with vacuum circuit breaker, HV cabling and connection box, which can be used to simulate one of the four HV diesel generator switchboard sections.



Instructor Station

The bridge console allows simulation of bridge controls, enabling the instructors to undertake the roles of the master and bridge watchkeepers. A wide range of faults can be introduced to test technical and non-technical resource management skills, as well as to examine the cohesiveness and effectiveness of the engineering team.

Ship Models

The following ship models are utilised:

- Very large crude carrier (large slow speed diesel propulsion)
- Fast ro-ro ferry (medium speed diesel engines driving water jet propulsion)
- Cruise ship (diesel-electric driving high voltage propulsion motors)

The ship's electrical power and distribution system can be reconfigured to match the ship model in use. An emergency diesel alternator complying with SOLAS requirements is also included within the system. The electrical system is fitted with the associated instrumentation and protective equipment.

“ The new simulator is a very welcome enhancement to a course which for several years has only seen positive feedback from our team members. ”

**Rick Harper, Director Safety, Training and Development,
Norwegian Cruise Line.**

Delegate Experience

Our expert team at Warsash Maritime Academy has a thorough understanding of on board systems and of the shipping industry's training needs. The integration of simulator technology, real vessel control systems and electrical systems marks a significant advancement in adding realism to our training.

For example, an engineer can enter a virtual photorealistic engine room which recreates a realistic time delay. The closed environment means that the course delegate has to communicate with the rest of the team by radio or telephone. Engine noise and temperature are also recreated to accurately mirror an engine room environment.

We test communication extensively to help develop situational awareness, which is a vital skill for any officer. Positions are rotated so that everyone has the opportunity to experience leading a team during exercises. Delegates do not see the instructors during an exercise – helping to create the most realistic experience possible.

The suite also houses microphones, cameras and video recording equipment, allowing the instructor to monitor participants' performance and to replay the course exercises for debriefing sessions.

Resource Management

The set-up of the simulator tests communication, co-operation, situational awareness, decision making, team working, leadership and managerial skills. The environment also recreates the time delays that would occur when moving through a real engine room.

A full suite of alarms and systems is in place to fully test delegates on fault-finding and diagnosis. Delegates can 'walk around' the entire engine room using a photorealistic virtual environment with touchscreen navigation technology.

Unlike any other engine room simulator, the high voltage (HV) and low voltage (LV) switchboards have been designed and built to be as realistic as possible, to the extent that all of the switchboard breakers are real. For officer cadets in training, this provides an excellent opportunity to see a real HV switchboard before going to sea.

Guided by Lloyds Register of Shipping, the layout of the power and distribution system is in accordance with current Classification Society rules.



Our Courses, Training and Assessment

We are able to provide a comprehensive range of courses, training and assessment, including the following:

- Engine Room Resource Management
- Steam Propulsion Plant Operations
- Electrical and Control Engineering for Marine Surveyors and Superintendents
- High Voltage (operational and management level)
- Electro Technical Officer
- Bespoke Engineering Officer Pre-employment or Pre-promotion Assessments



Contact Us

For a more comprehensive guide and technical specification, please visit our website www.warsashacademy.co.uk or contact us to discuss your requirements.

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