

Simulated Ship Type

The simulator is not designed to simulate the performance of a specific vessel, but is typical for a vessel with steam turbine propulsion via fixed pitch propeller. The vessel's systems are summarised below. Detailed descriptions and procedures can be found in the Machinery Operations Manual supplied.

Main Propulsion System

The ship derives power from steam generated by two boilers burning Diesel, Heavy Oil or Liquid Natural Gas and propels a Steam Turbine driving a fixed pitch propeller through a double reduction gearbox.

A service speed of 17 knots may be obtained at approximately 95 revs/min under the following conditions:

- Unlimited water (open sea)
- No current
- Clean hull
- Wind velocity and sea forces less than force 2
- Sea water temperature 15°C
- Both boilers operating
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Steam Power Plant

The simulated marine steam power plant includes the following:

Two Water Tube boilers that provide superheated steam @ 950°F (510 °C) and 875 psig (6 MPa). One 30,000 HP Main turbine plant comprising a High Pressure (HP) and Low Pressure (LP) Cross Compounded steam turbine set driving a single, fixed pitch, propeller through a double reduction gearbox. A 7000 HP Astern turbine is provided.

Fuel

Each boiler has two Oil (Diesel Oil or Heavy Oil) and two Gas Burners, individual burner management and combustion air control facilities. The burner control systems can be set for three modes: Oil, Gas or Dual Fuel.

Electrical Power Plant

Two Turbo Alternators (TAs), a Diesel Alternator (DA) and an Emergency Diesel Alternator (EDA) together with associated instrumentation, synchronization, distribution and protection equipment.

Auxiliary Plant

The auxiliary equipment and systems include:

- Fuel System for Heavy Oil (HO) and Diesel Oil (DO) comprising bunkers and associated filling, transfer and supply systems to burners.
- Cooling System comprising Main Salt Water (SW) Circulation pumps and a Scoop for supplying the main condenser.
- Lubrication System comprising Lubricating Oil (LO) system for supplying oil to the bearings and gearing. This includes, sump, circulating pumps, coolers, gravity tank, filters and a centrifugal separator.
- Steam, Condensate and Feed Water (FW) systems together with associated pumps, heaters, feed re-circulation and feed storage system.
- Control Air System with Compressor
- Fresh Water Distiller
- Bilge System
- Fire System
- Steering Gear System