



MAN 6S70ME-C SCC

The K-Sim Engine MAN 6S70ME-C SCC model simulates a Suez Max crude oil carrier with a MAN slow speed turbo charged diesel engine as propulsion unit modeled with fixed propeller. The main engine model respond dynamically to variations in operation and conditions of the ship model, and the ship model have mutual responses to the main engine model.

The model is based on real engine data that makes the dynamic behavior of the simulator close to real engine response. In addition to the MAN engine, the vessel has an electrical power plant including three 1125 kVA diesel generators and one 250 kVA emergency generator.

WHAT'S INCLUDED

VIEW PRICING

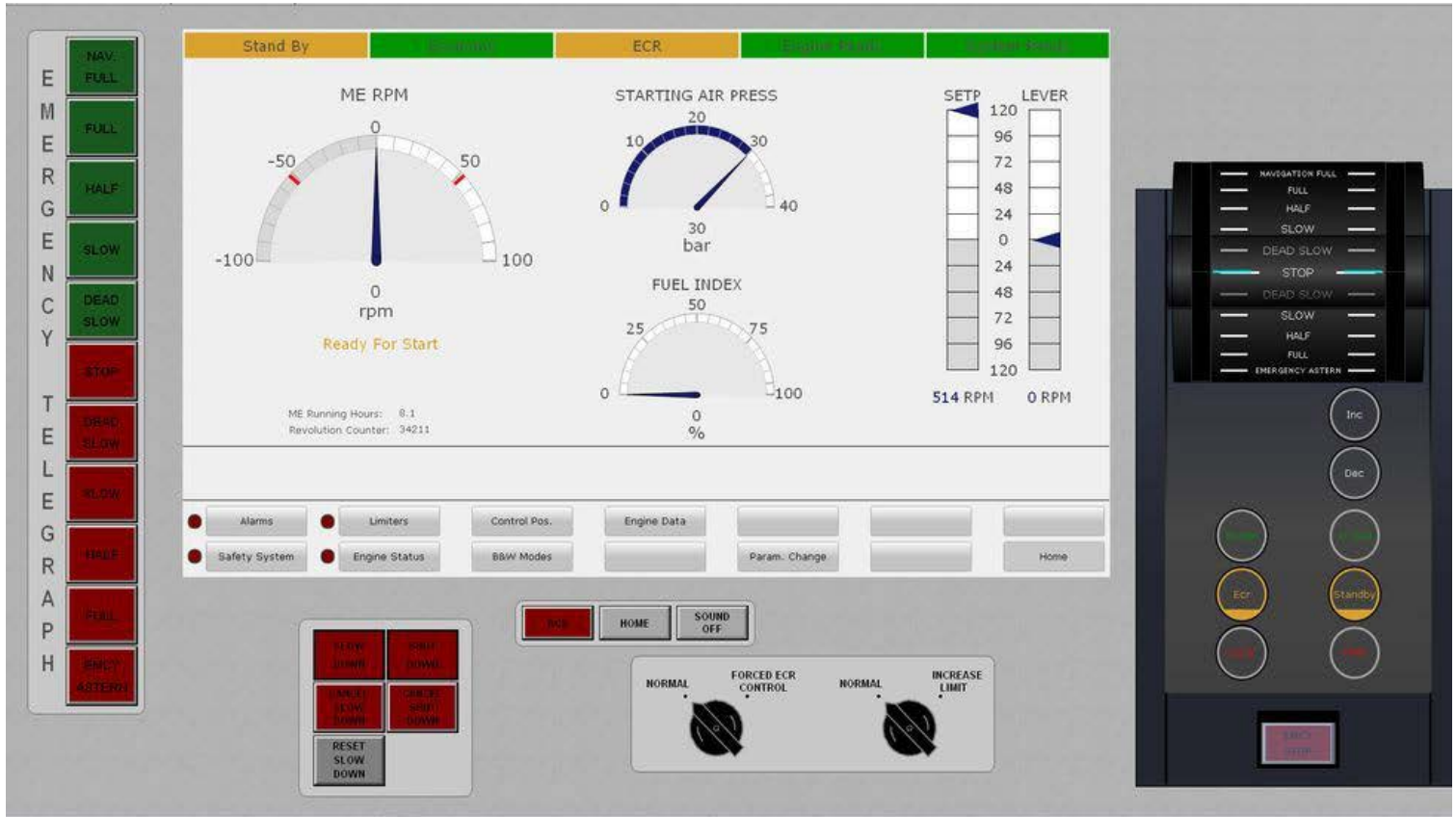
Key features

Type: MAN 6S70ME-C

- Cylinder bore: 70 cm
- Cylinder stroke: 280 mm
- No of cylinders: 6
- Corresponding engine speed: 91 RPM
- Mean indicated pressure: 20 bar
- Nominal rating: 18660 kW
- Spec. fuel oil consumption: 169 g/kWh
- Fuel: HFO 700cst/MDO
- Length overall: 269,0 m
- Breadth moulded: 46,0 m
- Draught: 24,4 m
- DWT, Scantling: 152,52 mt
- Speed: 15,5 knots

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The model is based on real engine data that makes the dynamic behavior of the simulator close to real engine response. In addition to the MAN engine, the vessel has an electrical power plant including three 1125 kVA diesel generators and one 250 kVA emergency generator. The steam plant includes two D-type steam boilers, based on Alfa Laval and one composite boiler (Aalborg), 3 cargo turbines, condensing and feed water systems. Control room operator station, bridge and steering panels are included.



Training objectives

The K-Sim Engine MAN 6S70ME-C SCC model is designed to be a valuable tool in the basic and advanced training of marine engineers. The training objectives are to train junior engineers in basic engine room operations, senior engineers in emergency operations and trouble shooting, and to train senior and chief engineers in optimal operation, fuel economy and energy conservation. This is achieved by controlled training, leading to better understanding of the total plant operation, as a result of realistic simulation of a real engine room.

Compliant with industry requirements: Kongsberg Digital simulator models exceed requirements in the STCW convention, Regulation 1/12 and fulfill DNV GL's standard DNVGL-ST-0033 for Maritime Simulator Systems.

Model Main Specifications

High fidelity engine room systems include:

- Sea & LT/HT fresh water systems, incl. FW generator
- Electrical power plant, incl. diesel generators and Power Management (K-Chief) • Start & service air compressors, incl. compressor intermediate coolers and emergency compressor
- Integrated Automation System, incl. Vessel Performance Monitor
- Steam plant Incl. D-type oil fired boilers and combined exhaust/oil fired boiler
- Diesel/heavy fuel/oil systems, incl. HFO, LSHFO and MDO tanks, separators, viscometers
- Lubricating oil systems, incl. separator
- Stern tube systems
- Steering gear
- Main engine control system (MAN)
- Main engine remote control system (AC 600)
- Main engine maneuvering system
- Main engine hydraulic oil system
- Main engine hydraulic cylinder units system
- Cylinder indication diagrams
- Air ventilation system
- Bilge wells & bilge separator
- Sewage treatment plant
- Incinerator plant
- Inert gas system
- Ballast system
- Refrigeration system
- Ship loading system
- Fire detection system
- Fire fighting system
- Remote CO2 release, emergency stops and quick release valves
- Emission Control System (water scrubbing, exhaust gas recirculation (EGR) and ME low Nox mode)

Note: Specifications subject to change without any further notice.



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OFFSHORE KRUPP MAK M42 AHTS

K-Sim Engine

K-Sim Navigation

K-Sim Cargo

OFFSHORE KRUPP MAK M42 AHTS

The K-Sim Engine Offshore Krupp MaK M42 AHTS model is based on a medium speed Engine Room configuration from a modern Anchor Handler, Tug & Supply vessel (AHTS) carrier with 4 Krupp Mak medium speed engines and 2 x controllable pitch in fixed Kort nozzles. The model has 1 x 2040 Bhp tunnel & 1 x 1770 Bhp CP Retractable Azimuth as the forward thrusters and 2 x 1200 BHP tunnel Stern thrusters.

WHAT'S INCLUDED

VIEW PRICING

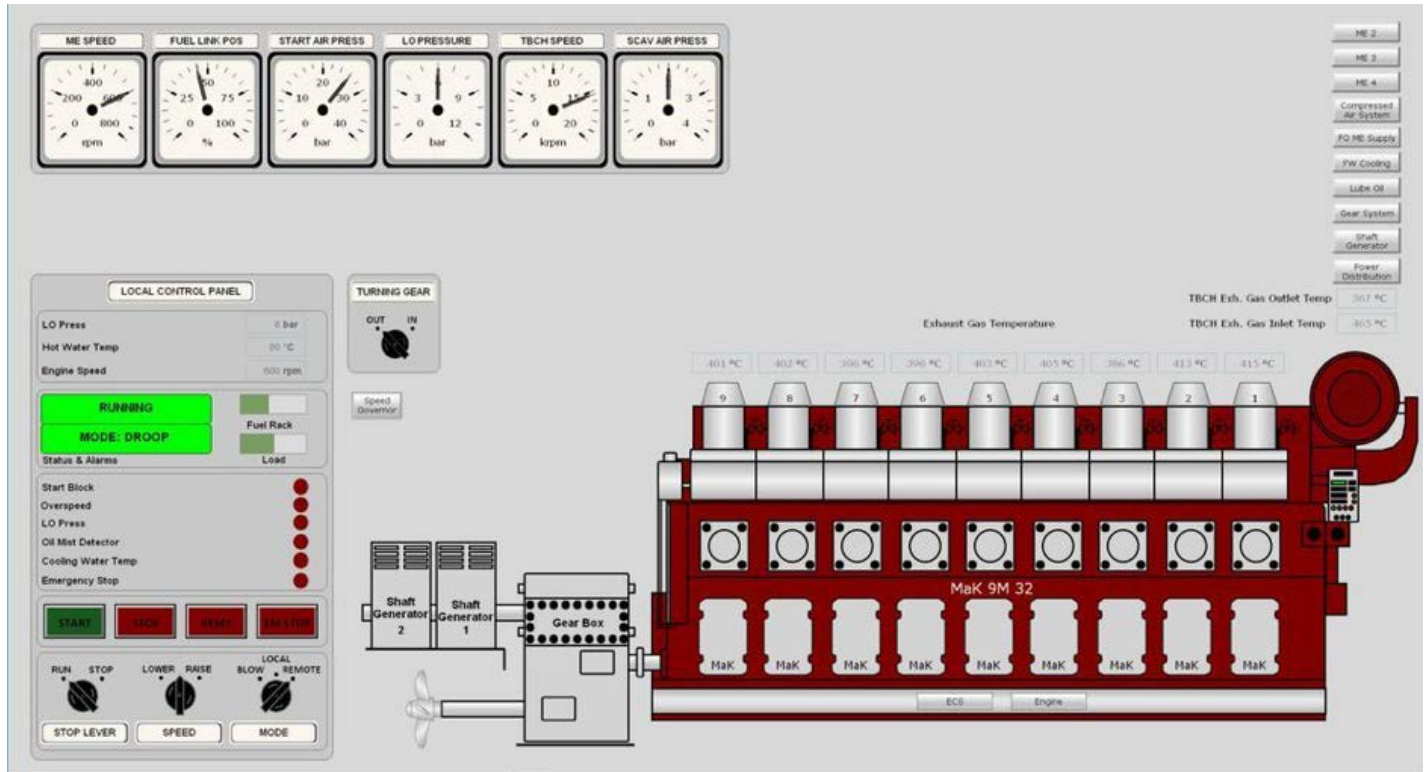
Key features

- Main Engines: 4 x Krupp MaK medium speed
- Propulsion type: 2 x CPP
- Diesel Generators: 2 1070kW diesel generators
- Shaft Generators: 4 x 2600kW shaft generators
- Corresponding speed: 102 RPM
- Fwd thrusters: 1 x Tunnel and 1 x Azimuth
- Aft thrusters: 2 x Tunnel
- Dynamic Positioning System: DP2
- Max consumption: 0,9 P/D
- Length overall: 90,3 m
- Breadth moulded: 23,0 m
- Draught: 9,5 m
- Tonnage: 6536 gt
- Speed: 17 knots

The control and automation systems include sophisticated power management, pump control and propulsion control. The main object for the simulator is to cover the operation and system understanding of the configuration 4 medium speed main engines geared down to two propellers including 4 shaft generator switch Electrical transmission to a switch board. Control room operator panels as well as bridge and steering panels are included.

Training objectives

The K-Sim Engine Offshore Krupp MaK M42 AHTS model is designed to be a valuable tool in the basic and advanced training of marine engineers. The training objectives are to train junior engineers in basic engine room operations, senior engineers in emergency operations and trouble shooting, and to train senior and chief engineers in optimal operation, fuel economy and energy conservation. This is achieved by controlled training, leading to better understanding of the total plant operation, as a result of realistic simulation of a real engine room.



Compliant with industry standards

Kongsberg Digital simulator models exceed requirements in the STCW convention, Regulation 1/12 and fulfill DNV GL's standard DNVGL-ST-0033 for Maritime Simulator Systems.

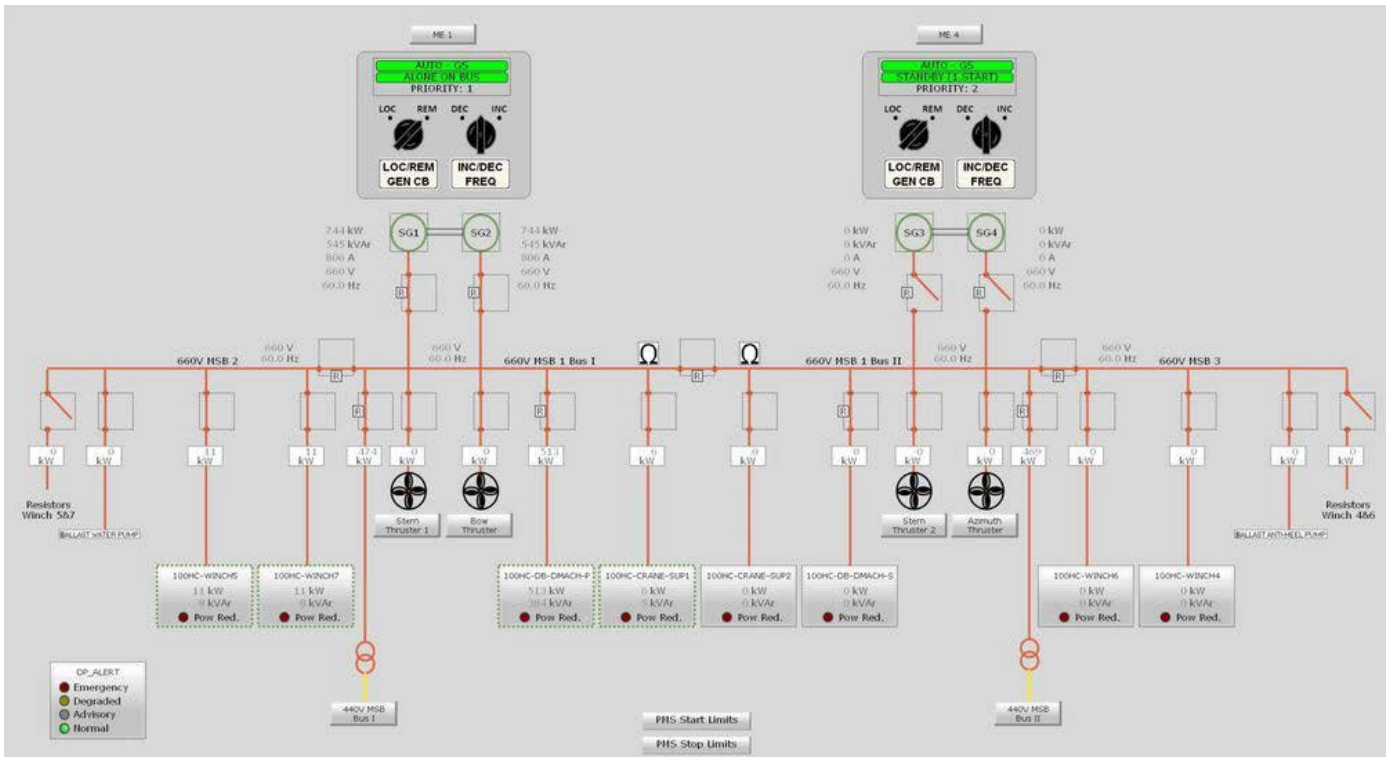
Model specifications

High fidelity engine room systems include:

- Propulsion Plant: 4 MAK medium speed main engines
- Gear system Twin shafts cpp
- Integrated Automation System
- Alarm and Safety Warning System
- Control and Power Management system
- Propulsion Control System
- Seawater Auxiliary Cooling System
- Exhaust system
- Lubrication Oil Filling, Transfer and Purification Systems

- Emergency Generator
- Diesel Generator Sets and Support Systems
- Shaft Generators and Support Systems
- Electric Power Supply Conversion Equipment
- Switchboards, Distribution, and Panels for Electric Power and Lighting
- Refrigeration System
- Fire alarm and Fire Fighting systems (machinery spaces)
- Fire main and Flushing (Seawater system)
- Sprinkler System (machinery spaces)
- Ballast system • Freshwater System/Freshwater Production System
- Potable Water System
- Freshwater Auxiliary Cooling Systems
- Fuel Systems
- Compressed Air Systems
- Bow Thrusters
- Stern Thrusters

Note: Specifications subject to change without any further notice





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SEMI-SUBMERSIBLE DRILLING RIG - DE88

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SEMI-SUBMERSIBLE DRILLING RIG - DE88

The K-Sim Engine Semi-Submersible Drilling Rig DE88 model is based on a dieselelectric semi-submersible drilling rig. The Model contains 8 Wärtsilä medium speed engines, each rated 5100 kW for power generation. The propulsion system is dieselelectric, and the engines are fitted with 11 kV generators supplying eight Azimuth thrusters, each rated 4000 kW.

WHAT'S INCLUDED

VIEW PRICING

Key features

- Rig Type Ultra deep water semi-submersible
- Main Engines 8 x Wärtsilä medium speed
- Propulsion type 8 x Azimuth / 4000kW
- Emergency Generator 1 x Diesel generator set /2000kW
- Dynamic Positioning system DP2
- Work area up to 3000m water depth
- Length overall 117,0 m
- Beam overall 78,0 m
- Draught (operational) 20,5 m
- Draught (transit) 9,7 m
- Draught (survival) 16,0 m
- Tonnage 37750 GRT
- Transit speed 10 knots

The control and automation systems include sophisticated power management, pump control and propulsion control. The main object for the simulator is to cover the operation, system understanding and advantages of a diesel electric plant. It also focuses on decision training, responding to abnormal and emergency situations that may occur on this kind of offshore plant. Control room operator panels as well as steering panels are included.

Training objectives

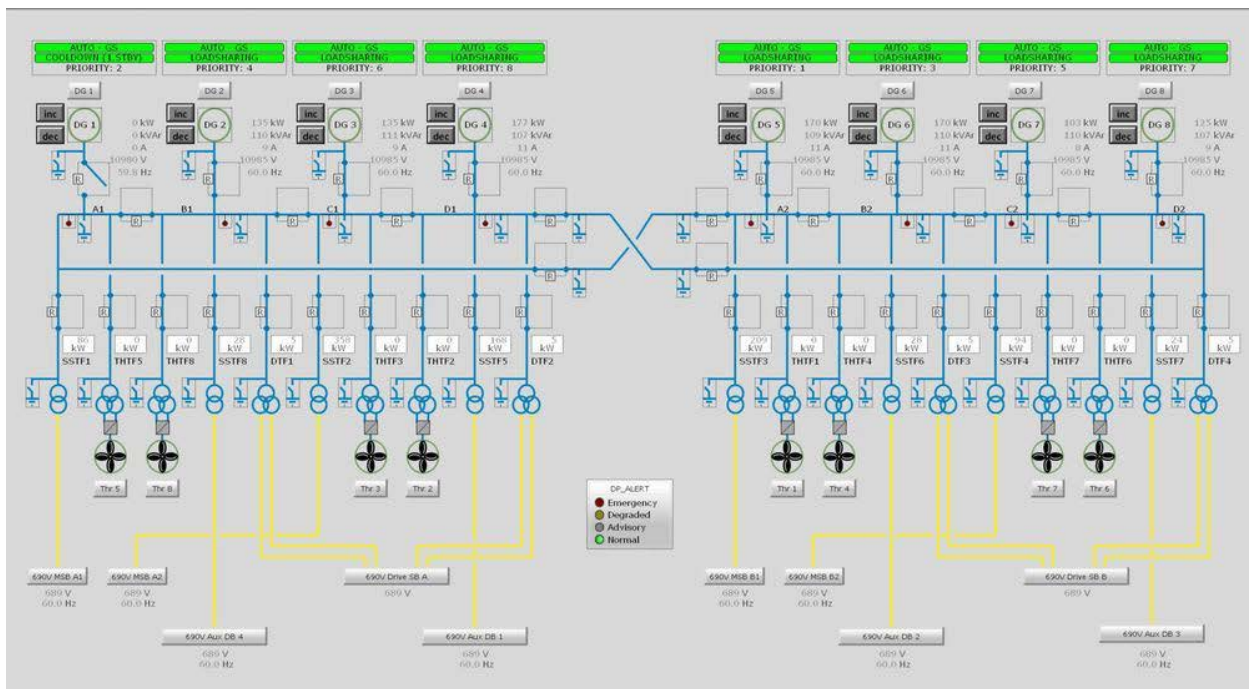
The K-Sim Engine Semi-Submersible Drilling Rig DE88 model is designed to be a valuable tool in the basic and advanced training of marine engineers. The training objectives are to train junior engineers in basic engine room operations, senior engineers in emergency operations and trouble shooting, and to train senior and chief engineers in optimal operation, fuel economy and energy conservation. This is achieved by controlled training,



leading to better understanding of the total plant operation, as a result of realistic simulation of a real engine room.

Compliant with industry requirements

Kongsberg Digital simulator models exceed requirements in the STCW convention, Regulation 1/12 and fulfill DNV GL's standard DNVGL-ST-0033 for Maritime Simulator Systems



Model specifications:

- Power generation 8 Wärtsilä Medium Speed Main Engines
- Main Generators 8 brushless A/C synchronous Generators
- Integrated Automation System Alarm and Safety Warning System Control and Power Management system
- Thruster Control System
- Seawater Cooling System
- Lubrication Oil System
- Emergency Generator
- Diesel Generator Sets and Support Systems
- Electric Power Supply Conversion Equipment
- Switchboards, Distribution, and Panels for Electric Power and Lighting
- Fire Detection, Water Mist



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- Fresh Water Cooling System
- Fuel Systems
- Fuel and Lubricant Handling and Storage Systems
- Compressed Air Systems
- Ballast system

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GAS TURBINE GE LM2500 30

K-Sim Engine

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GAS TURBINE GE LM2500 30

The K-Sim Engine GE LM2500 30 gas turbine simulator is designed to be a training package consisting of two General Electric LM2500 gas turbines. Each of them can be connected to an electric load or to water-brake via reduction gear for studies of gas turbine behavior against different types of load and conditions.

WHAT'S INCLUDED

VIEW PRICING

Key features

- Type: GE LM2500
- Power: 19700 kW
- Speed: 3600 RPM
- MCR: 54240 kW
- Spec. fuel consumption: 237 g/kWh

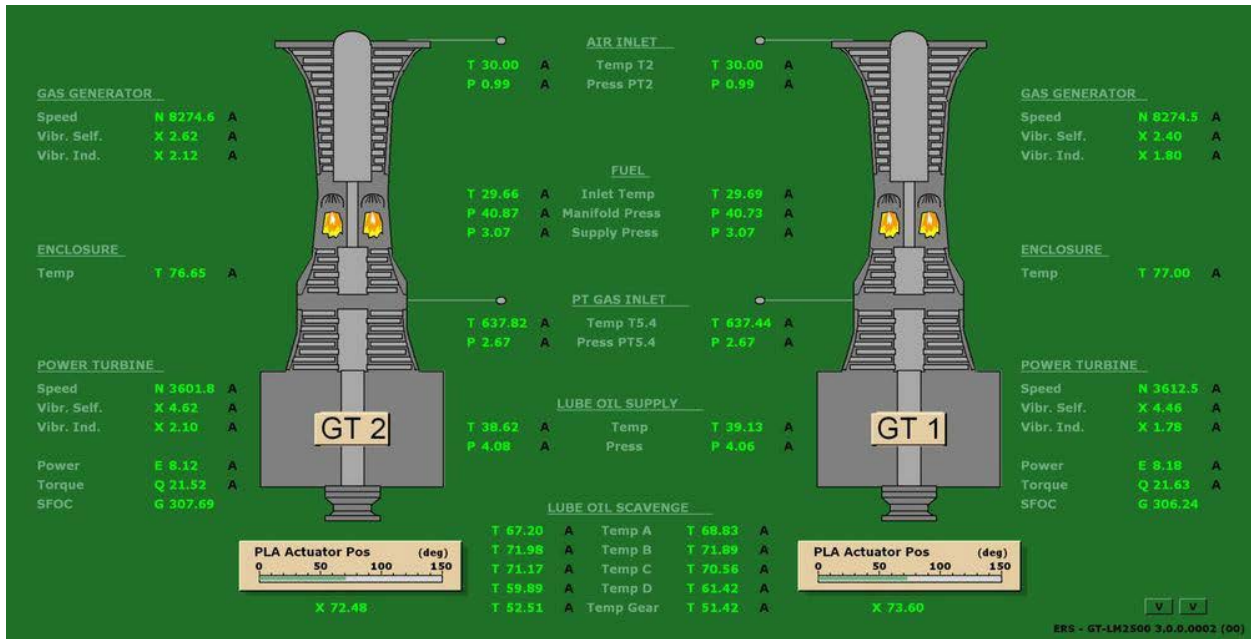
The K-Sim Engine GE LM2500 30 gas turbine simulator is designed to be a training package consisting of two General Electric LM2500 gas turbines. Each of them can be connected to an electric load or to water-brake via reduction gear for studies of gas turbine behavior against different types of load and conditions.

The modelled gas turbine is based on General Electric's two shafts heavy-duty gas turbine comprising a single spool gas generator followed by a power turbine.

Training objectives

The K-Sim Engine GE LM2500 30 Gas Turbine model is designed to be a valuable tool in the basic and advanced training of marine engineers. The training objectives are to train junior engineers in basic engine room operations, senior engineers in emergency operations and trouble shooting, and to train senior and chief engineers in optimal operation, fuel economy and energy conservation. This is achieved by controlled training, leading to better understanding of the total plant operation, as a result of realistic simulation of a real engineroom.

Compliant with industry requirements: Kongsberg Digital simulator models exceed requirements in the STCW convention, Regulation 1/12 and fulfill DNV GL's standard DNVGL-ST-0033 for Maritime Simulator Systems.





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Model Main Specifications

High fidelity engine room systems include:

For Gas Turbine 1 and 2:

- Fuel oil supply system
- Lubrication oil system
- Starting/ignition system
- Fuel system
- Ventilation/fire extinguish
- Load system
- Speed controller, incl. the facility to customize controllers for optimal control during various conditions
- GE Control Panels

Note: Specifications subject to change without any further notice.



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K-Sim RADAR/ARPA

K-Sim Engine K-Sim Navigation K-Sim Cargo

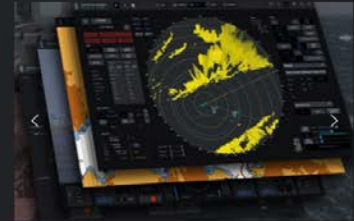
K-SIM RADAR/ARPA

K-Sim® Navigation Radar is ideal for maritime radar training and designed to be fully compliant with the IMO Model Courses 1.07 and 1.08. Used as an advanced eLearning tool, it enables instructors to efficiently manage and control exercises with realistic radar simulations to students, who can practice anytime and anywhere.

WHAT'S INCLUDED

VIEW PRICING

K-Sim RADAR/ARPA built in features include...



IT STARTS WITH THE RADAR

The radar is the first in a line of cloud-based training applications within the K-Sim Navigation portfolio on K-Sim Connect. Supplemented with ECDIS and additional functionality, K-Sim Navigation will constitute a complete cloud-based training solution, compliant with all the requirements for ship officer training as stated in the STCW convention.

K-SIM® NAVIGATION RADAR FOR ELEARNING

The K-Sim® Navigation Radar is an important innovation for navigation educators and training providers. Our legacy in navigation simulation excellence is recreated using the edge of cloud native technologies to create the all new radar simulator tailored to meet the versatile and changing demands of these new times. This Radar is designed to be compliant with the IMO Model Courses 1.07 and 1.08. It assists in delivery of simulation-based exercises meeting key learning objectives such as marine radar operational principles; radar navigation and plotting; use of radar in Search and Rescue (SAR); and use of ARPA.

Access to simulators at school can be limited by capacity and school hours, while it is commonly understood that volume training is key to increasing competence. Used as an advanced eLearning tool, our cloud based radar simulations application enables instructors to facilitate radar training for students, who now can practice anytime and anywhere.

LEARNING OBJECTIVES

The radar application is designed to comply with the IMO Model Course 1.07 - Radar Navigation, Radar Plotting and Use of ARPA and the IMO Model course 1.08 - Radar, ARPA, Bridge Teamwork and Search and Rescue. It is specifically designed for the following learning objectives:

- Basic theory and operational principles of a marine radar system
- Radar setting and operation
- Using radar to ensure safe navigation
- Manual radar plotting
- Operation of ARPA or radar target tracking (TT) and AIS reporting functions
- Application of COLREGs when using radar
- Use of Radar in Search and Rescue (SAR)

A CLOUD-NATIVE SOLUTION

Our cloud-based radar eLearning solution is available on K-Sim Connect, our ecosystem through which we provide cloud-based simulation services to the maritime education and training industry. The instructor tool is easy to use and enables instructors to efficiently manage and distribute exercises to students, with cutting-edge radar simulations.

There are several ways enable cloud simulations. At Kongsberg we have chosen to rebuild our simulators as true cloud-native applications as we believe that this will best benefit our many users. The users will experience this as a reliable and robust simulator able to operate 24/7 without any need to limit the number of instructors and students simulating exercises at the same time, or for the instructors to book a timeslot on the simulator to provide the exercises. Also, there is no need to worry about versioning and compatibility of software of content.

It can be argued that our approach will not provide the full list of simulator features from day one, and that is true. Our development team knows this and is working with laser focus to add new functionality. And since this service is hosted on large central data centers, deploying fixes, new features and updates is done in a matter of hours or even minutes, so you will benefit without delay from our efforts.

READY-MADE EXERCISES

The radar eLearning is delivered with initial condition exercises. As an instructor, you can choose between a selection of ship models and geographical sailing areas to meet the various training objectives. You will later also have the option create and upload your own-made exercises, and also to connect an instructor system.

The radar eLearning solution introduces a new line of navigation instruments based on IMO performance standards. Leveraging market-leading K-Sim Navigation functionality and cutting-edge cloud technology, it is a powerful and intuitive tool providing students with optimal realism in radar simulations and training scenarios.

SUBSCRIPTION-BASED SERVICE

The radar eLearning module is a subscription-based service. Kongsberg will run the simulation in our cloud data center whenever you or your student demands it through the K-Sim Connect portal. To be able to use it, you don't need to purchase or own any special simulator infrastructure such as e.g. servers or dedicated networks with routers and switches. The monthly subscription covers your access to the software and the infrastructure operation required.

Your subscription can be scaled based on your specific needs, such as how many students require access, and how much simulation time the students require. For users committing to long term subscriptions we do also offer additional discounts. Navigate to the pricing calculator to explore the pricing options. If you have any questions at all, please reach out and we will be happy to discuss solutions to your simulation needs.



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MINIMUM REQUIREMENTS

This service runs completely in the cloud so we don't impose any complicated hardware or software requirements on you or the students. All you need to get started using this simulation service is:

- A relatively good and stable Internet connection, and
- Any computer with any modern web browser.

We do our development and testing optimized for the Google Chrome browser. Also we do recommend that you use a laptop or a desktop computer with a minimum of 13 inches screen to be able to see and operate the radar and the instruments.

SIMULATOR INCLUDES

SHIP MODELS

- BULKC11 - Hagland Saga
- CNTNR23 - KMSS Uni-Assure
- CNTNR28 - Sovereign Maersk
- CNTNR43 - OOCL St.Petersburg
- CORV03 - Corvette 987
- CRUIS10 - Royal Princess
- FERRY28 - Ofoten
- FERRY34 - Northern Expedition
- FISH07 - Generic Fishing Vessel
- GAS14 - Maran
- LIFE01 - Life raft
- PATRL19 - RS 138 Sundt Flyer
- PRODC04 - Maria Theresa



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- RHIB07 - RIB - 7 m
- SAIL04 - Sail boat
- TANK16 - Americas Spirit
- TUG03 - Alert
- TUGBA02 - Tug and Barge combined
- VLCC18 - Elizabeth I. Angelicoussi

EXERCISE AREAS

- Europort
- English_channel_E
- Gothenburg
- Singapore
- Oslo_N
- Oslo_S

INSTRUMENTATION

- RADAR with ARPA
- Throttle
- Steering system
- Autopilot
- Heading monitor
- Speed log