

# K-SIM CARGO



## KONGSBERG CARGO HANDLING SIMULATORS

K-Sim liquid cargo-handling simulators provide quality training in complex load and discharge operations. Reality-based exercises can simulate various cargo system configurations and load conditions, providing improved competence in safe, sustainable, and competitive cargo operations.

Our model library is based on actual ship specifications and performance data. It includes product tanker, chemical tanker, LPG/ethylene tanker, LNG tankers, Suezmax tanker, and very large crude carrier (VLCC).

K-Sim Cargo can be customized to exact requirements, upgraded and expanded at any time and integrated with our other ships simulators, enabling interdepartmental training.

## K-Sim<sup>®</sup> Cargo SCCII Suezmax crude carrier

The K-Sim Cargo - SCC-II simulator model is based on a real Suezmax crude carrier with 12 cargo tanks and 2 slop tanks with the actual specifications and performance data of the vessel. The simulator model enables integrated, real-time exercises for students and ship officers training on liquid cargo handling operations.

### Model description

The SCC II model simulates the vessels inert gas plant, which cleans the flue gas to prevent the atmosphere in cargo tanks from coming into the explosive range. The pump configuration represents a typical crude oil carrier with three cargo pumps, two ballast pumps, three oil/gas separators, stripping pump and ejector.

The model is delivered with a sophisticated integrated automation system (IAS) to replicate Cargo Control Room (CCR) operations and additional process mimics for operation of the systems outside of the CCR. In addition the model contains a CCTV system with three camera angles; view from both manifolds and a third camera with view from the jetty.

Kongsberg's state-of-the-art load calculator, K-Load, is also integrated in the model. The system uses the various tank levels and corresponding specific gravity, and calculates hydrostatic conditions, intact stability, longitudinal strain, tank content and damage stability. It can also produce ullage reports and loading reports.

### STCW requirements

The Suezmax crude carrier model meets the requirements of STCW section A-II/1, A-II/2, A-II/3, A-III/1, A-III/2, and A-V/1. These sections cover

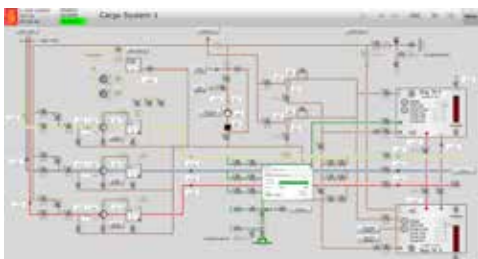
- planning and ensuring safe loading
- care during the voyage and unloading of cargoes
- trim, stability, and stress to maintain seaworthiness of the ship

### DNV GL certification

This model is certified and approved according to DNV GL's Standard for Certification of Maritime Simulator Systems ST-033 March 2017.



Process overview



Cargo system



Inert gas system

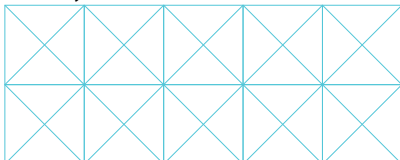


K-load



DECK VIEW

Datasheet version:  
K-Sim Cargo – Suezmax crude carrier  
February 2019.



## MODEL FEATURES AND DETAILS

### Vessel's main particulars

Length overall	269,16 m
Breadth	46.00 m
Depth moulded	24.40 m
Draught at design DWT	16,20 m
Light ship weight	24,300 mt
DWT, scantling	152,522 mt
DWT, design	138,393 mt
NET, international	48,804
NET, suez	76,318
Cargo tanks	12
Ballast tanks	14
HFO tanks	4
Slop tanks	2
Cargo pumps	3 x 4000 cbm/h
Inert Gas Capacity	15000 cbm/h

Note: Specifications subject to change without notice

## TRAINING LEVELS

The simulator solution can be provided both as a desktop system for classroom training and as a full mission system. A BigView 3D interactive mimic with 3D pop-up displays also available for enhanced familiarization of the cargo operations.

The simulator is suited for the following training:

- Junior officers in basic cargo operations
- Senior officers in full-scale cargo operations (loading/discharging/ tank cleaning /venting)
- Senior officers and captains in advanced cargo-handling operations

## SIMULATED FEATURES

The training objective of this model is to understand the total cargo- handling operation. Specific training objectives include the following:

- Integrated Automation System (IAS), incl. alarm handling, trend systems, remote operation valves and pumps and tank monitoring
- Shore tanks
- Cargo system 1
  - Cargo pumps with vacuum separators
  - Cargo eductors
  - Stripping pump
  - Cleaning heater
- Cargo system 2:
  - Cargo bottom lines with valves,
  - Cargo tanks & slop tanks with:
    - Ullage & pressure
    - Average temp, top, middle and bottom temp
    - Heating coil and PV valve
- Deck lines
- Cargo pumps
- Cargo cleaning system with heater
- ODME
- Inert Gas System with distribution
- Ballast system include lines, tanks, 2 pumps & ejector
- Automatic Unloading System (AUS)
- High and High high level alarms
- Intact stability
- Longitudinal strength – bending moment and shear forces
- K-Load loading calculator
- CCTV
- Big View and 3D Deck View solutions