

K-SIM CARGO



KONGSBERG



K-Sim[®] Cargo Chemical carrier

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.

Chemical tankers are complex vessels with cargoes that require careful management. The operator must maintain a historical record of the contents of each tank and consider the cargoes in adjacent tanks before loading.

Due to the risk of a chemical reaction, some cargoes cannot be stored next to each other and tanks must be cleaned according to very specific procedures when their cargo has been discharged.

Model description

The chemical carrier model is based on a real ship modified to cover most chemical carriers, including tank types 1, 2, and 3. It has 37 tanks, all fitted with fixed submerged pumps and separate lines and manifolds. It also includes an inert gas generator, a bank of N₂ bottles, and 20 available ready-made cargo types. The user may enter 10 cargoes of their choice. Tank atmosphere data is calculated continuously. There are no chemical reactions between the cargoes, but cargoes may solidify.

STCW requirements

The chemical 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

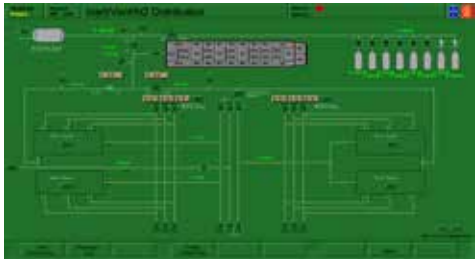
- planning and ensuring safe loading
- care during the voyage and unloading of cargoes
- trim, stability, and stress to maintain seaworthiness of the ship

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.



MD 200 inert gas plant



MD 210 inert/vent/N2 distribution

MODEL FEATURES AND DETAILS

Vessel's main particulars

Dead-weight	36733 MT
Length overall	182.30 m
Length bpp	177.10 m
Breadth moulded	32.00 m
Depth moulded	14.00 m
Summer draught	10.73 m

Vessel details

Cargo tanks	37: 29 SS and 8 mild steel coated w/ zinc
Ballast tanks	10 in double hull
Cargo pumps	100-600 m ³ /h at 90 mLC Hydraulic and electric
Portable pumps	2
Portable fans	6
Heating system	3 tanks - thermal oil heating 34 tanks - hot water heating

Note: Specifications subject to change without notice

TRAINING LEVELS AND OBJECTIVES

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

Training objectives

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

- Familiarization with all parts of the cargo system
- Planning a cargo-loading or discharge operation using the Data Load load computer
- Lining up for loading and ballast handling simultaneously (check atmosphere)
- Stripping final remains of a tank and stack according to normal procedures
- Controlling the flow into each tank and the trim/list of the ship
- Topping up and finalizing loading
- Preparing and lining up for discharge including inert gas plant or N2 supply
- Starting up discharge from one or more tanks with fixed submerged pumps
- Tank cleaning with fixed guns (setting correct pressure and washing angles)
- Planning what tanks/cargo to load/discharge in which port
- Cleaning tanks with detergent
- Venting tanks for inspection/docking using an explosion diagram for each tank (included in the model)

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

