

LIQUID CARGO HANDLING SIMULATOR

LCHS 5000



TRANSAS



The Transas LCHS 5000 TechSim Liquid Cargo Handling simulator is designed to train, assess and certify crew members of liquid cargo tankers, gas carriers and terminals, as well as other staff responsible for the safe cargo handling and the operation of auxiliary equipment. The LCHS 5000 TechSim provides an exact, detailed copy of vessel/terminal systems and their components. This simulator is an ideal solution for training centres, academies, government authorities, shipping companies, coastal centres and crewing agencies. In addition, the simulator enables onboard training and demonstration of competency.

Training objectives

The Transas LCHS 5000 TechSim Liquid Cargo Handling Simulator replicates a modern cargo control room, allowing a comprehensive study of tanker and terminal layouts, including its machinery and systems, according to international standards and requirements:

- General arrangement of the tanker and its systems;
- Maintenance of the tanker systems on management level;
- Control of vessel ballast system;
- Control of trim, stability and stress;
- Proficiency in tanker technological operations;
- Maintaining seaworthiness of the ship, planning and the safe loading, stowage, securing, care during the voyage and unloading of cargoes;
- Control of pump, valves and piping systems;
- Resource management training;
- Responding to emergencies;
- Taking precautions to prevent pollution of the environment;
- Tanker/terminal interaction: cargo transfer systems, shore storage, shore equipment and instrumentation.

Compliance

The Transas Liquid Cargo Handling Simulator meets the requirements of international standards:

- Standard training for ship officers of all vessel types within the competency framework of STCW'95 (with Manila amendments) Convention requirements;
- IMO model courses: IMO 2.06 "Oil Tanker Cargo and Ballast Handling Simulator"; IMO 1.01 "Tanker Familiarization"; IMO 1.02 "Specialized Training for Oil Tankers"; IMO 1.04 "Specialized Training for Chemical Tankers"; IMO 1.06 "Specialized Training for Liquefied Gas Tankers";
- DNV Standard for certification No.2.14 Maritime Simulator Systems;
- OCIMF marine terminal training and competence assessment guidelines for oil terminal and product terminals;
- MARPOL 73/78 requirements;
- SIGTTO requirements.

Simulator components

Instructor workstation

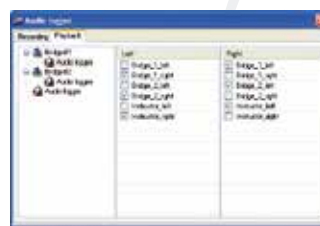
- Dual monitor workstation demonstrating and recording all trainee's actions during an exercise;
- 3 operating modules:
 - Exercise Editor – creating and editing of exercises;
 - Online control – running a class and monitoring the exercises performance;
 - Debriefing – loading/viewing of recorded actions.
- Intercom and Audio/Video loggers;
- e-Tutor – automated tutorial, assessment and monitoring system.



e-Tutor automated evaluation and assessment system



Intercom station



Audio logger



Intercom station

Trainee workstation

Interactive scalable drawings of the systems and subsystems:

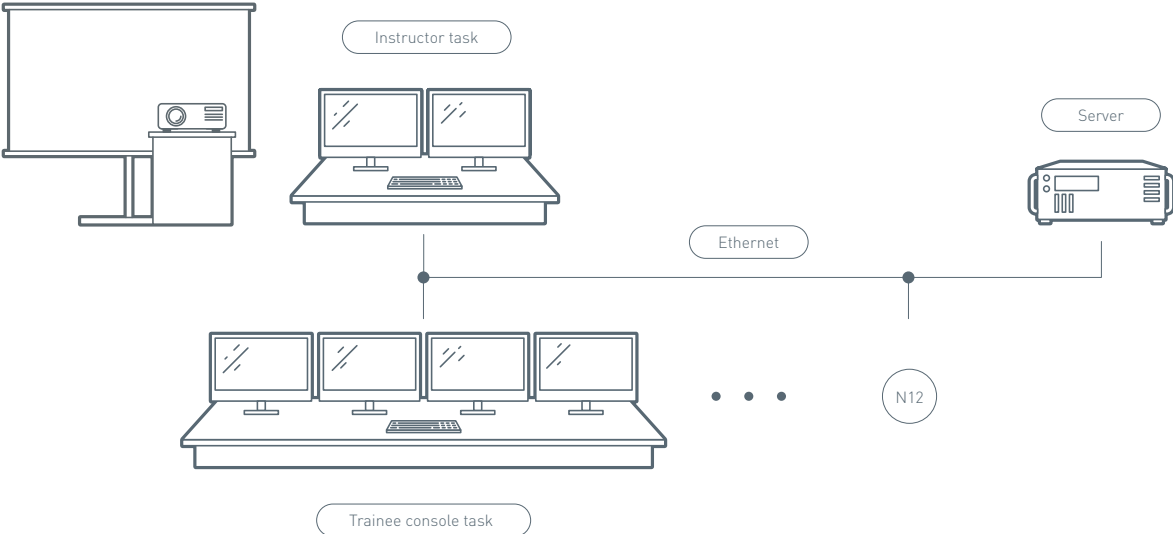
- Cargo operations control console;
- Cargo Monitoring System;
- Integrated automation system;
- Closed circuit television (CCTV);
- 3D visualisation of the ship deck;
- Real control panels and touchscreens;
- Video Wall Mimic diagrams.

Configuration options

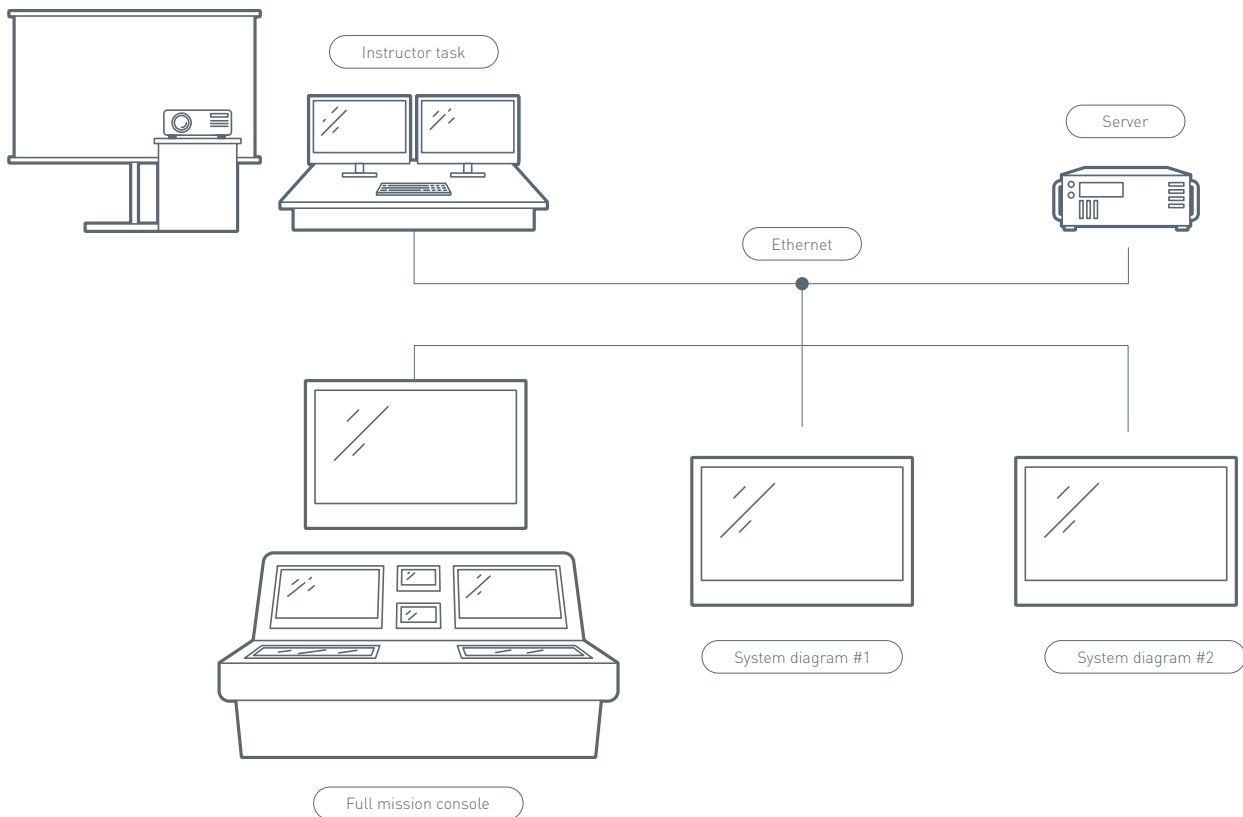
Standalone mode for self-study or shipboard operation



PC-based networked class for group and team training under instructor supervision



Full mission configuration for the ultimate realistic hands-on training and certification using a high fidelity ship like environment



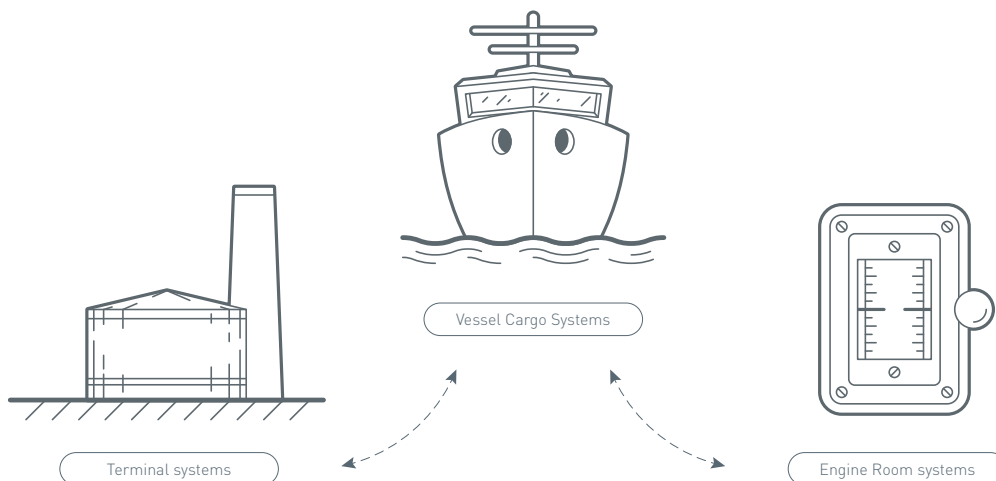
Complete resource management training through simulators integration

LCHS interconnectivity:

- Ship to ship transfer: cargo transfer systems;
- Vessel-terminal interaction: cargo transfer systems, shore storage, shore equipment and instrumentation.

Joint operation with engine room and navigational simulator:

- Power generation/consumption;
- Heat supply for cargo system;
- Auxiliary machinery and subsystems;
- Firefighting system.

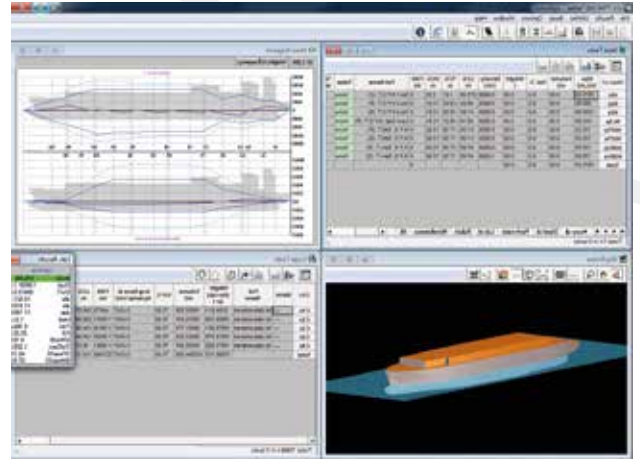


Simulated systems

- Tank Washing System;
- Deckwash Fire System;
- ODME System;
- Gas Detection System;
- Loading control system;
- Submerged Cargo Pumping System/Steam driven cargo pumps;
- Ballast System;
- Cargo System;
- Tank Heating System;
- Inert Gas System.

Loading Control System

Tanks, hull strength, ship stability and ship loading in the simulator are calculated by the included Load Calculator System. This program links all the necessary shipboard calculations with the ship loading, its stability and strength. Use of the software is required by STCW 2010 recommendation B 1/12, i 40 (2,3).



Various model types

Ship model library includes the major gas and oil tankers used in the marine cargo handling industry worldwide. All simulator models are based on the real ship/terminal prototypes and replicate their systems to a very high level of fidelity.

Different cargo types

Different cargo types can be selected from the simulator databases. Operations are carried out for almost all types of cargo.

Mathematical model

The math-model allows run-time to be accelerated in order to make training time more efficient, without any deterioration in realism.

Graphic User Interface

The interface is optimised for familiarisation with the operating principles of the entire system and to provide practical skills in equipment handling. The main tanker units are depicted as 3D objects, showing cross sections of individual assemblies. Computer animation is used to display current processes.

Developing new models on request

Specific oil, chemical and product carriers DNV class A simulators based on customer's prototype data can be developed on request within 3-4 months.



Model Library

We continuously extend our library with detailed realistic models based on real prototypes.

Chemical Tanker



Product Tanker



LCC Tanker



LNG Tanker



LNG Terminal



LPG Tanker





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