

“OIL TANKER CARGO & BALLAST HANDLING SIMULATOR”

5-DAY TRAINING COURSE

- **OVERALL AIM**

It is a practical and theoretical Training Course, aimed at helping the participating Masters and Deck Officers to make a more effective contribution to the safe and environmentally-sound oil tanker cargo and ballast handling operations. The Training Course has been designed according to the IMO Model Course 2.06 “*Oil Tanker Cargo and Ballast Handling Simulator*”.



- **LEARNING OBJECTIVES**

On completing the course, the Trainees, will:

- Have acquired a greater awareness of the proper pre-planning, use of the Ship-Shore Safety Checklist and of the implementation of safe procedures during loading/discharge of crude oil and petroleum products.
- Be able to take precautions to prevent cargo-generated flammability, electrostatic and toxicity hazards.
- Be able to prepare, perform and monitor all cargo operations, including inerting and gas-freeing, tank cleaning operations and crude oil washing.

- Have acquired experience in identifying operational problems and making decisions to solving them.
- Be better familiar with the cargo handling equipment, instrumentation, devices and alarms.

- **FACILITIES**

The Training Course will take place at the ATHINA Maritime Learning and Development Center's K-Sim Liquid Cargo Full-Mission (Class A) and Desk-Top (Class C) Simulators and in the specially designed Loading Instrument – Familiarization Classroom.

The Full-Mission Simulator consists of a Centralized Cargo Control Room with all necessary consoles and instrumentation including an Oil Discharge Monitoring and Control System, Overfill Devices, an on-line loading, stress and stability instrument, Inert Gas Panel and a fixed gas detection system. A special compartment simulates the shore loading/discharging terminal station and local deck post stations.



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- DAILY SCHEDULE**

DAY 1	09:30 – 09:45	Introduction, Learning Objectives
	09:45 – 11:00	Properties of Crude Oil & Petroleum Products <i>Flammability, Vapor Pressure, Toxicity</i> <i>Hazards involved during cargo handling and transport</i>
	11:00 – 11:15	Coffee Break
	11:15 – 12:00	Properties of Crude Oil and Petroleum Products <i>(continued)</i>
	12:00 - 13:00	Types of Cargo Pumps & Operation <i>Steam Turbine and FRAMO Pumps</i> <i>Pumps' Performance Curves</i> <i>Stripping pumps, AUS, Ejectors</i>
	13:00 – 13:45	Lunch Break
	13:45 – 15:00	Familiarization with the LCHS Simulator <i>Modelled Tankers, Process Mimics, IAS Remote/Local Operation</i>
	15:00 – 15.15	Coffee Break
	15:15 – 16:00	Familiarization with the LCHS Simulator <i>(continued)</i>



DAY 2	09:30 – 09:45	Day 1 Recap – Schedule of 2 nd Day Training Activities
	09:45 – 11:00	Working with Ship Specific Tables & Plans - Calculations <i>Determination of Cargo Transfer Rates/VECS</i> <i>Tank Calibration Tables, Cargo Calculations</i> <i>Parallel Body & DWA Calculations</i>
	11:00 – 11:15	Coffee Break
	11:15 – 13:00	Familiarization with the Loading Instrument (ANKO) <i>Intact Stability/Stresses (SF/BM)</i> <i>Ullage papers & calculations</i> No.2 Exercise “Loading for Specific Arrival Draft”
	13:00 – 13:45	Lunch Break
	13:45 – 15:00	No.3 (Simulator) Exercise “Initial Inerting – Preparation for Loading Operation”
	15:00 – 15.15	Coffee Break
	15:15 – 16:15	No.4 (Simulation) Exercise “Discharging High Temperature Fuel Oil in Cold Sea”

DAY 3	09:30 – 09:45	Day 2 Recap – Schedule of 3 rd Day Training Activities
	09:45 – 11:00	Preparation of Cargo Transfer Plan <i>Closed Loading Operations – Loading Stages</i>
	11:00 – 11:15	Coffee Break
	11:15 – 12:00	Planning of Fuel Oil Conventional Loading <i>ANKO Calculations (25%, 50%, 75%, Max. Filling Level)</i>
	12:00 – 13:00	No.5 (Simulator) Exercise “Arrival in Ballast Condition – Commence Loading”
	13:00 – 13:45	Lunch Break
	13:45 – 14:30	Topping Off – Finalization of Loading – Overfilling Risks
	14:30 – 15:00	No.6 (Simulator) Exercise “Loading Operation from 70% - Sidi Kerir Case”
	15:00 – 15.15	Coffee Break
	15:15 – 16:00	No.6 (Simulator) Exercise (continued)

DAY 4	09:30 – 09:45	Day 3 Recap – Schedule of 4 th Day Training Activities
	09:45 – 11:00	Operational Safety <i>Ship – Shore Safety Checklist</i> <i>Laden Passage Tank Pressure Management</i> <i>Arrival to Discharging Port – Cargo Calculations</i>
	11:00 – 11:15	Coffee Break
	11:15 – 12:00	Operational Safety (continued) <i>Discharge Rates, Predictions</i> <i>Review of Pumps Performance Diagrams</i>
	12:00 – 13:00	No.7 (Simulator) Exercise “Start Discharging”
	13:00 – 13:45	Lunch Break
	13:45 – 15:00	No.7 (Simulator) Exercise (continued) “Start Discharging”
	15:00 – 15.15	Coffee Break
	15:15 – 16:15	No.8 (Simulator) Exercise “Stripping and COW Exercise”

DAY 5	09:30 – 09:45	Day 4 Recap – Schedule of 5 th Day Training Activities
	09:45 – 11:00	Vessel Experience Factor – Cargo Measurements
	11:00 – 11:15	Coffee Break
	11:15 – 12:00	Environmental Considerations in Cargo Handling <i>ODME – Slops Decanting – Permissible Discharges</i> <i>Ballast Water Treatment Impact to Cargo Operations</i>
	12:00 – 13:00	No.9 (Simulator) Exercise “Full Tank Cleaning Operation”
	13:00 – 13:45	Lunch Break
	14:00 – 15:00	No.9 (Simulator) Exercise (continued) “Full Tank Cleaning Operation”
	15:00 – 15.15	Coffee Break
	15:15 – 15:30	Evaluation of Course – Closing