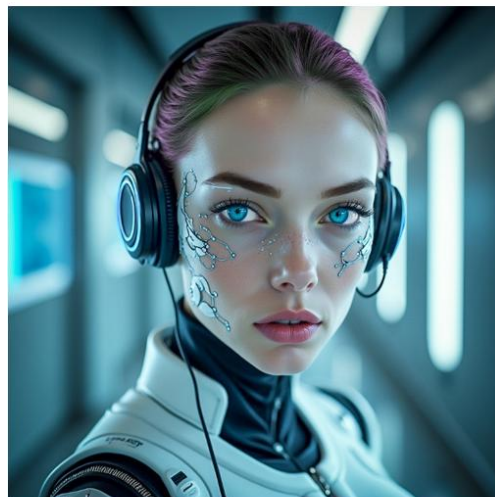


# 2026 LPG Terminal Operations & Loading Master Training Program



**What is new?**

**Cassandra**



'Only those systems that use  
optimal information can function.  
Let me test yours'

TTT funded the development of an Artificial Intelligence named 'Cassandra'. Based on The General Law of Functionality, Cassandra detects knowledge gaps and can test and predict HSEQ Performance and Operational Excellence. She acts as an Early Warning System preventing risk. This is a unique service only offered by us.

## COURSE OUTLINE

### DAY ONE

#### **Session 1**

**Introduction:** How to prevent and control the various risks of the Ship/Shore Interface? TTT developed a unique learning method based on the science of information theory. Before we start the course, you will understand that information is key. We designed an Early Warning System to measure the information quality and quantity available in your terminal/refinery.

### PRE-TRAINING TEST

We ask 10 questions to test existing knowledge in order to assess specific areas that need in depth coverage. Asking general questions related to loading master duties, this allows customizing the training program to ascertain optimum benefit to the students.

#### **Session 2. Introduction to LPG Shipping and Storage**

- Why Liquefy?
- Cryogenic temperatures and their effect on Mild steel
- Why Safety is a priority?

### **Session 3. LPG Ship and Shore Tanks Specifics**

- Tanks design principles and standard designs
- The importance of Void Space and gas detection.
- Types of LPG tanks.

### **Session 4. Tank Terminal Principles for Loading and Discharging**

- Role and Responsibilities of Loading Master
- Loading procedures and critical operations
- Discharging / Loading procedures
- Heel Retention
- Tank Cleaning procedures
- How the cargo is transferred from Vessel to the terminal?
- Challenges faced during the transfer
- Operational Limitations of Deep well Cargo pumps

### **Session 5. HSEQ and Communications: ISGOTT 6 SSSCL Ship/Shore Safety Checklist Instruction-Chapter 21&25**

- Composition of the Ship Shore Safety Checklist
- Safety Letter
- Instructions for completing the Ship Shore Safety Checklist
- Collecting relevant information (using TTT excel sheet)
- Role Play Session; Loading Master / Chief Officer Key Meeting Simulation
- Cargo Load/Discharge Agreement
- NATO Alphabet – Everyone must be able to use it
- SIGTTO ,ISPS, Personnel Safety Case Study, Best Practices
- Use of Multi-Gas Detectors and Importance of calibration

## **DAY TWO**

### **Session 6. LPG Calculation Methods**

- Determination of Bill of Lading Figure
- Gauging and Ullage Reports
- Vapour and Liquid Calculations exercise
- How to determine the final outturn?
- Potential disputes and temperature calculations

### **Session 7. Cargo Load/Discharge Plan/Cargo Cycle Stages**

- Example of a Load/Discharge plan and various stages involved
- Why planning is critical?

- Ship preparation, Inerting, Gassing up, Cool Down, Loading, Discharging, Inerting, Gas Freeing and Preparation for Dry Dock.
- Use of Cool Down Curves.
- Use of Multi-Gas Detectors and Importance of calibration
- Inert Gas and ice formation issues
- LPG tank Commissioning

### **Session 8. Quality control and Sampling Procedures**

- Handling of Samples
- Sampling of LPG
- Transporting and Sealing Samples

### **Session 9. Standard Mooring Arrangements for LPG ships**

- Overview of Mooring Arrangements.
- Emergency Release hooks
- Use of Fire wires
- Function and use of Emergency Release Coupling

## **DAY THREE**

### **Session 10. Case study discussion on operational risks**

- Risk management with LPG.
- Leakage of LPG from Cargo Manifolds
- How to detect leakages?
- How to prevent leakages?
- The Best Practice of Handling LPG
- Gas – Incident Free LPG operations

### **Session 11. Ship-Shore Interface/Emergency Shutdown Systems**

- Types of Shut Down systems.
- Why shut-down must be done? Preferable method of shutting down.
- Contingency Plan

### **Session 12. Review of Workshop Materials**

### **Session 13. Written Examination**

- Results- discussion and evaluation
- The final test results will be compared to the pre-test results to measure information
- Awarding of Loading Master Certificates of Competence

- Discuss the Answers with the delegates and find out competency gaps among those who fail and propose advanced training.
- Online Testing performance and HSEQ by Cassandra.

**Note:**

*A 4<sup>th</sup> day can be added, (if possible) to visit a tanker and instruct the class how to physically check relevant technical specifics listed on the Ship/shore Safety Checklist.*



*Your Trainer: Captain. Shyam Paliwal*

Shyam has more than 12 continuous years of successful hands-on problem solving and decision making experience in challenging, dynamic and multifaceted marine work environments at sea and ashore, in a position of responsibility or other crucial decision-making leadership capacities. This includes 7 years as a Captain/Senior officer aboard deep-draft LNG tanker vessels transporting volatile cargoes in the world-wide liquid gas trade, with unblemished safety record as well as outstanding personnel evaluations.

This was followed by 5 years of work experience at LNG and Oil & Gas Terminals in Korea in the capacity of LNG advisor to Shell Trading and Shipping Company (STASCO). During his time with Shell he was responsible for Oil loss control and helped save millions of dollars by preventing shortages and contaminations. Shyam has worked as a Consultant in Korea for P&I clubs in investigating contamination losses of petroleum products. He has successfully reduced the vessel turnaround times and increased berth utilization. He commissioned the 4 largest LNG carriers in the world the Q-Max vessels at LNG Import terminals in Korea. Each vessel is an LNG terminal on its own with a re-liquefaction plant and an enclosed flare. Shyam also supervised the building of 25 Oil and LNG Tankers at Samsung, Daewoo and Hyundai Shipyards in Korea as a Nautical Inspector while working for Shell in South Korea. He provided LNG marine operations, safety and regulatory compliance consulting services to major energy and marine transportation companies. Shyam has significant shore side operations management experience with broad knowledge of commercial aspects of global maritime enterprise and energy shipping. He holds various marine technology patents and copyrights. He is a Master Mariner and a member of the Nautical Institute, UK. Shyam has trained hundreds of loading masters, operators and managers worldwide for TankTerminalTraining.

*We make people better!*