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# Liquefied Petroleum Gas Carrier Cargo Handling and Reliquefaction Plant Training Course

28 February – 4 March 2027
Sharm El-Sheikh

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**Ref:** 2771_106010 **Date:** 28 February – 4 March 2027 **Location:** Sharm El-Sheikh **Fees:** 5500 GBP

Liquefied Petroleum Gas Carrier Cargo Handling is a one-week training course for cargo officers, terminal loading supervisors and marine superintendents, who build a voyage cargo plan covering loading rates, tank pressures and reliquefaction plant settings. Propane and butane cargoes now move on tighter schedules with stricter vapour-emission expectations. Jupiter Prime Training presents liquefied petroleum gas carrier cargo handling with that operational focus.

## Why Liquefied Petroleum Gas Carrier Cargo Handling Matters Now

Three forces shape cargo work on gas carriers today. Terminals expect shorter port stays, compressing cooldown and loading windows. Grades change more often, so purging and gassing up are more frequent. Crews face closer scrutiny of vapour venting and compressor energy use. Good cargo planning protects the containment system and keeps product on specification; poor planning risks tank stress, demurrage disputes and flammable vapour releases.

## Who Gains Most from Liquefied Petroleum Gas Carrier Cargo Handling

- Shipboard cargo officers responsible for loading sequences, tank levels and pressure control during transfers
- Cargo engineers who operate and maintain compressors, condensers and heat exchangers of the reliquefaction plant
- Terminal loading supervisors who agree transfer rates, vapour return and emergency shutdown links with the ship
- Marine and technical superintendents who approve cargo plans, grade changes and plant maintenance intervals

A fleet or terminal group gains most when ship officers and shore supervisors attend together and agree one transfer language.

## Liquefied Petroleum Gas Carrier Cargo Handling Capabilities

Participants work with saturated vapour pressure, tank filling limits and cascade cycle behaviour until the plant and the cargo plan can be read as one system.

- Calculate tank filling limits from cargo temperature and density — the loading figure agreed with the terminal
- Design a cooldown and gassing-up sequence for a new grade — the master's decision on arrival readiness
- Assess reliquefaction plant capacity against boil-off and ambient sea temperature — the choice between venting, holding and reducing rate
- Apply ship-shore safety checks and emergency shutdown tests — the transfer start authorised by both parties
- Weigh grade change options, from purging with inert gas to warming up — the voyage schedule set by operators

## Key Liquefied Petroleum Gas Carrier Cargo Handling Terms

- Fully refrigerated carrier — a gas ship that carries cargo near atmospheric pressure at its boiling temperature in insulated tanks.
- Semi-pressurised carrier — a ship whose tanks hold cargo at moderate pressure and partly reduced temperature, giving flexibility between grades.
- Reliquefaction plant — compressors, condensers and receivers that turn boil-off vapour back into liquid and return it to the tanks.
- Cascade cycle — a reliquefaction arrangement where a separate refrigerant condenses cargo vapour when sea water alone cannot.
- Gassing up — replacing inert gas in cargo tanks with cargo vapour before cooldown and loading begin.
- Filling limit — the highest liquid level a tank may hold so that expansion at reference temperature never fills it completely.

## Liquefied Petroleum Gas Carrier Cargo Handling Day by Day

## Day 1: Cargo Properties and Containment Systems

- Propane, Butane and Mixture Vapour Pressure Curves — Grade Selection
- Fully Refrigerated, Semi-Pressurised and Pressurised Ship Types — Fleet Deployment
- Independent Tank Types and Secondary Barriers — Containment Inspection Priorities
- Cargo Compatibility and Polymerisation Inhibitors — Grade Acceptance Decisions
- Material Brittleness at Low Temperature — Tank and Piping Limits

## Day 2: Tank Preparation and Grade Changes

- Inerting with Nitrogen and Inert Gas Generators — Oxygen Content Targets
- Gassing Up Sequence and Vent Handling — Terminal Vapour Return Agreement
- Cooldown Rates and Tank Temperature Gradients — Thermal Stress Control
- Warming Up and Gas-Freeing for Dry Dock — Shipyard Entry Readiness
- Grade Change Planning Between Incompatible Cargoes — Voyage Schedule Trade-offs

## Day 3: Reliquefaction Plant Operation

- Direct Single-Stage and Two-Stage Compression Cycles — Plant Mode Choice
- Cascade Refrigerant Condensers and Sea Water Temperature — Capacity Margins
- Compressor Suction Pressure and Discharge Temperature Monitoring — Trip Prevention
- Purge Condenser and Non-Condensable Gas Removal — Plant Efficiency Loss
- Plant Power Demand and Fuel Use — Holding Versus Venting Decisions

## Day 4: Loading, Discharge and Ship-Shore Interface

- Filling Limit Calculation and Ullage Tables — Agreed Loaded Quantity
- Loading Rate, Vapour Return and Tank Pressure Balancing — Transfer Speed
- Deepwell Pumps, Booster Pumps and Cargo Heaters — Discharge to Pressurised Shore Tanks
- Emergency Shutdown Links and Ship-Shore Safety Checklist — Transfer Authorisation
- Cargo Calculation, Sampling and Custody Records — Quantity Dispute Prevention

## Day 5: Applied Voyage Cargo Planning

- Leak Detection, Water Spray and Fire Response on Deck — Emergency Readiness
- Cooldown and Gassing-Up Exercise for a New Grade — Arrival Readiness Check
- Reliquefaction Capacity Check for a Hot Climate Voyage — Rate Reduction Choice
- Loading Sequence with Filling Limits and Trim — Terminal Rate Agreement
- Voyage Cargo Plan Assembly and Peer Challenge — Superintendent Approval Pack

## Applying Liquefied Petroleum Gas Carrier Cargo Handling After the Course

- Lead a review of the vessel's last grade change against the gassing-up and cooldown sequence taught, recording vent losses and time spent
- Run a reliquefaction plant capacity check with the cargo engineer using current sea temperatures and compressor trends, then update the holding and venting guidance

## Liquefied Petroleum Gas Carrier Cargo Handling Questions FAQ

### What is liquefied petroleum gas carrier cargo handling and why does it matter now?

It is the planning and control of loading, carriage and discharge of propane and butane on gas ships. It matters now because port stays are shorter, grade changes more frequent and vapour release expectations stricter.

### Which roles gain most from liquefied petroleum gas carrier cargo handling?

Cargo officers, cargo engineers and terminal loading supervisors gain most.

## How does liquefied petroleum gas carrier cargo handling differ from onshore gas storage or liquefied natural gas courses?

It concentrates on the ship: refrigerated and semi-pressurised tanks, reliquefaction plant and the ship-shore transfer. Onshore storage, cylinder filling and natural gas containment belong to neighbouring courses.

## What do you bring back from liquefied petroleum gas carrier cargo handling?

You bring back a voyage cargo plan setting loading rates, filling limits, tank pressures and reliquefaction plant settings.

## Liquefied Petroleum Gas Carrier Cargo Handling: The Way Forward

The voyage cargo plan first informs the decision on loading rate and filling limit agreed with the terminal. Cargo officers and superintendents use it to brief the crew and plan plant running hours. After its first voyage, revisit the reliquefaction settings against actual sea temperatures and boil-off.