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COURSE BROCHURE

Loading Arm Maintenance and Troubleshooting Training Course

1 – 5 February 2027
New York

Loading Arm Maintenance and Troubleshooting Training Course

Ref: 1602_58701 **Date:** 1 – 5 February 2027 **Location:** New York **Fees:** 9500 GBP

Loading Arm Maintenance and Troubleshooting is a 1-week training course for terminal maintenance technicians and marine loading engineers, built around a loading arm inspection and troubleshooting guide that each participant prepares for the arms at their own jetty or gantry. A leaking swivel or a failed emergency release can spill product, stop a ship transfer or delay a fleet of road tankers. Jupiter Prime Training delivers this course on Loading Arm Maintenance and Troubleshooting.

Why Loading Arm Maintenance and Troubleshooting Matters Now

Three forces shape loading arm upkeep today. Terminals handle more product grades, including biofuels and liquefied gases, which attack seals and change swivel wear. Ship and tanker turnaround targets leave little time for repairs between transfers. Many arms installed decades ago now run on ageing hydraulic power units with scarce spares. A terminal that maintains its arms well keeps berths available and avoids spills; one that does not faces leaks, stuck arms and costly demurrage. The course draws on asset criticality and lifecycle cost principles to rank arms and components for attention.

Who Gains Most from Loading Arm Maintenance and Troubleshooting

- Technicians who inspect, lubricate and reseal swivel joints
- Engineers who plan arm overhauls and approve modifications
- Hydraulic fitters who maintain power units, valves and cylinders
- Jetty and gantry operators who connect arms and report faults
- Planners who schedule arm outages around ship and truck slots

A terminal gains most when its maintenance technician, hydraulic fitter and jetty operator attend together.

Loading Arm Maintenance and Troubleshooting Capabilities

Participants move from naming the parts of an arm to tracing a fault back to the swivel, hydraulic circuit or coupling that caused it.

- Assess swivel joint seals, ball races and leak paths — reseal timing
- Specify counterweight balance checks for marine and top-loading arms — operator safety
- Test hydraulic power units, cylinders and control valves — hydraulic fitter
- Apply function tests to emergency release couplings and quick connect couplers — transfer readiness
- Diagnose drifting, stiff or jerky arm movement from symptoms — repair priority
- Build an inspection schedule by arm criticality and product type — maintenance planner

Key Loading Arm Maintenance and Troubleshooting Terms

- Marine loading arm — an articulated steel pipe assembly on a jetty that transfers liquid between shore lines and a ship manifold.
- Top and bottom loading arms — gantry arms that fill road tankers through the roof hatch or through bottom couplings.
- Swivel joint — a rotating pipe joint with ball races and seals that lets the arm move while staying leak-tight.
- Counterweight — a mass that balances the arm so it moves easily and stays where placed when released.
- Emergency release coupling ERC — a device that separates the arm from the ship and closes valves on both sides during excess movement.
- Quick connect disconnect coupler QCDC — a hydraulically or manually clamped coupler that joins the arm to the ship flange without bolts.

Loading Arm Maintenance and Troubleshooting Day by Day

Day 1: Loading Arm Types and Operating Envelope

- Marine, Top-Loading and Bottom-Loading Arm Designs — Maintenance Scope
- Operating Envelope and Ship Movement Limits — Alarm and Release Zones
- Product Effects on Seals and Materials — Grade-Specific Care
- Arm Criticality and Failure History — Ranking Arms for Attention
- Isolation, Draining and Purging Before Work — Safe Access

Day 2: Swivels, Counterweights and Structure

- Swivel Joint Construction and Seal Types — Choosing Repair Kits
- Swivel Leak Detection and Ball Race Wear — Reseal or Replace
- Counterweight Balance and Adjustment — Free-Wheeling Behaviour
- Structural and Pipe Wall Inspection — Corrosion and Fatigue Checks
- Grease Points and Lubrication Routes — Preventing Stiff Swivels

Day 3: Hydraulics and Controls

- Hydraulic Power Unit Pumps, Accumulators and Filters — Pressure Stability
- Cylinders, Control Valves and Hoses — Leak and Drift Diagnosis
- Remote Control Pendants and Limit Switches — Movement Faults
- Position Monitoring and Alarm Systems — Envelope Protection
- Hydraulic Oil Cleanliness — Avoiding Valve Sticking

Day 4: Couplings and Emergency Release

- Quick Connect Disconnect Couplers — Clamp Function and Seal Checks
- Emergency Release Coupling Valves and Collars — Release Testing
- Dry Break Couplings on Truck Arms — Drip-Free Disconnection
- Vapour Return Arms and Grounding — Static and Emission Control
- Fault Trees for Leaks, Stuck Arms and Failed Releases — Root Cause

Day 5: Practising the Loading Arm Troubleshooting Guide

- Swivel Leak Case on a Crude Oil Jetty Arm — Applying Day 2
- Hydraulic Drift Case on an LPG Marine Arm — Applying Day 3
- Dry Break Fault at a Fuel Distribution Gantry — Applying Day 4
- Inspection Intervals by Arm Criticality — Annual Plan
- Loading Arm Inspection and Troubleshooting Guide — Completed for One Terminal

Applying Loading Arm Maintenance and Troubleshooting After the Course

- Inspect every swivel on one marine arm, record leak signs and seal age, and propose a reseal sequence.
- Witness a function test of the emergency release coupling and quick connect coupler and log any delays or leaks.

Loading Arm Maintenance and Troubleshooting Questions FAQ

What is loading arm maintenance and troubleshooting, and why does it matter now?

It is the inspection, repair and fault finding of marine and truck loading arms, their swivels, hydraulics and couplings. It matters now because new product grades, tight turnaround targets and ageing hydraulics raise leak and breakdown risk.

Which roles gain most from loading arm maintenance and troubleshooting?

Terminal technicians, marine loading engineers, hydraulic fitters and jetty operators gain most, since each handles part of keeping arms leak-tight and ready.

How does loading arm maintenance and troubleshooting differ from a loading master course?

It concentrates on repairing and testing the arm hardware, while a loading master course covers cargo transfer procedures, ship-shore checks and terminal operations.

What do you bring back from loading arm maintenance and troubleshooting?

You bring back an inspection and troubleshooting guide for your terminal's arms, listing checks, intervals, common faults and their likely causes.

Loading Arm Maintenance and Troubleshooting: The Way Forward

The loading arm inspection and troubleshooting guide first informs which arms are taken out of service at the next berth window. Technicians follow its checks, engineers use its fault trees to approve repairs, and planners book outages around ship and truck slots. After its first use, revisit whether seal choices suit new product grades.