



## Terminal Operating and Management System (Marine Loading Arm)



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## Introduction:

This marine terminal management and operation training course will empower you with in-depth knowledge and a thorough understanding of marine loading arms and their corresponding terminal control systems. The knowledge and information gained through this course will enhance your skillset and potential to take up roles with higher responsibilities, thus contributing to your career progression. Further, by undertaking this course, you can handle technical glitch-related hiccups as soon as possible.

The exposure and confidence gained through this training session will empower you to provide more suggestions and enhancement ideas to the loading process. Overall, this marine terminal management and operation training course will equip you to significantly contribute to seamless cargo transport from the terminal storage facility to the vessel, increasing your avenues for growth and progression.

This comprehensive marine terminal management and operation course will delve into the intricacies of terminal operations and management, focusing on the pivotal role of Marine Loading Arms. Throughout this course, participants will explore various topics integral to understanding and enhancing terminal management and operations.

## Course Objectives:

The main objective of this marine terminal management and operation course is to empower marine professionals with:

- Thorough knowledge and information about marine loading arms and terminal control systems.
- The required experience and knowledge to devise and implement new ideas and advanced technologies to manage the loading process seamlessly and efficiently.
- The required skill to undertake more significant organizational roles and responsibilities, contributing to career growth and progression.
- Adequate knowledge and confidence to successfully train new employees on the working and mechanics of marine loading arms and their associated terminal control systems.
- Reduced risk of mishaps and other damage to property and lives because of trained individuals performing operations.
- Understand the required skills and experience to manage control systems seamlessly with advanced tools and technologies.
- The dynamic experience to handle all functions undertaken by control systems.
- The required awareness and experience to work with different control systems.

## Targeted Groups:

- Owners and top management of marine organizations are responsible for making purchase decisions and other such finance-related critical decisions for their organizations.
- Technicians and engineers operate control systems and panels during loading.
- Other port officials and ship crew would participate in activities during the loading process.
- Auditors and safety inspectors ensure adherence to universal employee health and safety standards and environmental regulations.
- Legal authorities and finance advisors are responsible for taking the legal course in the event of conflict or hazard.

## Targeted Competencies:

At the end of this marine terminal management and operation training, the target competencies will be able to:

- Strategic Planning and Decision Making.
- Safety and Environmental Compliance.
- Operational Efficiency and Productivity.
- Cargo Handling and Storage Management.
- Financial Management and Budgeting.
- Risk Management and Emergency Response.
- Leadership and Team Management.
- Regulatory Knowledge and Compliance.
- Customer Service and Relationship Management.
- Technological Proficiency and Innovation.

## Enhancing Terminal Management Through Advanced Technologies:

Understanding and implementing advanced technologies in terminal systems is critical in an era when efficient terminal operations are integral to successful marine logistics. This marine terminal management and operation course will explore how modern terminal operating systems, ranging from electronic data interchange EDI to radio-frequency identification RFID, transform terminal management and operations.

Participants will gain insights into the strategic integration of these systems to optimize terminal management solutions, ensuring smooth marine loading arm operations and maintenance. By the end of this module, you will be equipped with knowledge of terminal operating systems and the distinct types of terminal operating systems available in the industry today.

## **Course Outline:**

### **Unit 1: Principles of a Marine Loading Arm Design:**

- Operating safety.
- Environment protection.
- Lean technology.
- Ease of operation.
- Low maintenance.
- Ease of shipping and set-up.

### **Unit 2: Parts of a Marine Loading Arm:**

- Stand post/riser.
- Inboard arm.
- Outboard arm.
- Swivel joints.

### **Unit 3: Three Types of Flange-Flange Connections:**

- Bolted flange connection.
- Manual, quick couplers.
- Hydraulic quick couplers.

### **Unit 4: General Functions of Terminal Operating Systems:**

- Shipping management.
- Rail transport management.
- Road transport management.
- Yard management.
- Invoicing/reporting.
- Inventory.

### **Unit 5: Different Types of Terminal Control Systems:**

- Local control.
- Explosion-protected pendant control.
- Radio control.
- Human-machine interface HMI position monitoring system.

## **Unit 6: Types of Ports/Terminals Managed by a Control System & Technologies Used by Terminal Control Systems:**

- Container terminals.
- Multi-purpose terminals.
- Universal/river terminals.
- Internet.
- Electronic data interchange EDI processing.
- Mobile computers.
- Wireless local area networks LANs.
- Radio-frequency identification RFID.

## **Unit 7: External Communication Avenues through Terminal Control Systems:**

- Terminal operators.
- Freight forwarders.
- Shipping agents.
- Container operators.
- Port authorities.
- Customs officers.

## **Unit 8: Points of Consideration When Choosing Terminal Operating Systems:**

- Current pain points.
- Cost-effectiveness.
- Impact on customer service.
- Impact on traffic capacity.
- Scope for future optimization.