

NPORS N014 Marine Knuckle Boom Crane



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NPORS N014 Marine Knuckle Boom Crane

Introduction

This course delivers the underpinning knowledge and practical skills required to operate a marine knuckle boom crane safely and effectively in marine and offshore environments. Designed for crane operators, the program emphasizes machine mechanics, safety systems, managing dynamic offshore conditions (such as sea uplift and vessel motion), and conducting over-side lifts in full compliance with relevant maritime and safety regulations.

Learning outcomes

By the end of the course, delegates will be able to:

- Have a basic understanding of offshore crane lifting operations, the dangers of working in the industry and their responsibilities as an operator
- Have a working knowledge of the manufacturer's handbook for the particular machine to be used
- Be able to interpret the requirements of the lift plan and risk assessment
- Be able to locate and identify the major components of the machine and explain their functions
- Be able to locate and identify key controls and explain their functions
- Set up exclusion zone explaining actions required for emergency actions and identify any hazards
- Identify and maintain PPE appropriate for knuckle boom crane use
- Conduct all pre-operational and running checks in accordance with manufacturer's and legislative requirements
- Identify and inspect suitability of landing area
- Prepare the knuckle boom crane for lifting duties as well as over side lifts. Operate machinery safely and efficiently taking into consideration sea uplift and moving vessel decks
- Environmental considerations
- Carry out all end of work and shut down procedures

Course content

The theoretical module covers the health, safety, and operational regulations relevant to offshore and marine lifting operations:

Theory

The theoretical module covers the statutory regulations, documentation, and safety procedures critical for supervising lifting operations:

- **Legislation & Regulations:** Health and Safety at Work Act 1974, PUWER, LOLER, COSHH, The Merchant Shipping (Hatches and Lifting Plant) Regulations, Working at Height Regulations, BS 7121 (Parts 1, 2, and 4), ACOP L113, and Marine Guidance Notices (MGN331, MGN332).
- **Documentation & Lift Planning:** Method statements, risk assessments, permits to work, load manifests, duty charts, and equipment test certificates.
- **Machine Components & Mechanics:** Power units, pedestal/adaptor, crane house, operator's cabin, slew systems, hydraulic systems/rams, counterweights, main/auxiliary/tugger winches, boom configuration (main, knuckle, telescopic), ropes, and hook blocks.
- **Safety Devices & Overload Systems:** Function and operation of Automatic Overload Protection Systems (AOPS), Manual Overload Protection Systems (MOPS), Rated Capacity Indicators (RCI), Load Moment Indicators (LMI), limit switches, and anemometers.
- **Environmental & Maritime Factors:** Managing dynamic conditions including sea uplift, moving vessel decks, water contamination, wind speed limits, noise, and fuel/oil spill protocols.
- **Safety Protocols & Communications:** Radio protocols, hand signals, setting up deck exclusion zones, mandatory PPE (e.g., life jackets, safety boots, hard hats), and defect reporting/quarantine procedures.
- **Safe operating techniques of the equipment.**

Practical

The practical module assesses the operator's ability to inspect, set up, operate, and shut down the marine knuckle boom crane safely and efficiently:

- **Pre-Operational & Running Checks:**
 - Perform full pre-use inspections as per pre-use inspection checklist.
 - Verify test certification, establish communications, and follow defect reporting protocols.

- **Site & Landing Area Inspection:**

- Inspect and select landing areas to ensure structural load-bearing suitability.
- Check and establish exclusion zones for deck crew.

- **Crane Operations & Lifting Tasks:**

- Prepare and program the RCI/LMI for specific load duties and falls of rope.
- Mount/dismount the crane safely and execute smooth control movements to minimize wear and prevent load swing.
- Perform the operation of marine knuckle boom as per instructor guidelines.
- Account for sea uplift, vessel movement, boom deflection, and wind speed during lifting operations.

- **End of Work & Shutdown Procedures:**

- Stow and fold the boom in the correct sequence and retract extension jibs.
- Apply slewing/rail locks, ensure no load remains on the hook, switch off/refuel the power unit/generator, remove the ignition key, clean the machine to prevent corrosion, and leave the crane safe and secure.

Training Methodology

This course uses a blend of theoretical and practical learning methods to ensure knowledge retention and hands-on skill development. Training delivery includes:

- **Interactive classroom presentations and discussions**
- **Real-life case studies and examples**
- **Demonstrations of equipment and techniques**
- **Supervised practical load transfer exercises**
- **Group activities to enhance communication and coordination**
- **Instructor feedback and coaching throughout the course**

Assessment

- Practical assessment of marine knuckle boom operational tasks. Observation and performance evaluation by certified NPORS instructor as per the NPORS practical test sheet
- Written examination (Combination of subjective and objective questions) to test theoretical knowledge

Certification

Candidates who successfully complete the course and pass the assessment will receive:

- NPORS Operator Card valid for 3 years, subject to refresher training and reassessment

Entry Requirements

Participants must meet the following criteria to enroll in the course:

- Be at least 18 years of age
- Be medically fit to perform marine knuckle boom operational duties
- Have a basic understanding of English (for verbal and written communication)
- Ideally, have some prior experience in the operation of marine knuckle boom operational tasks (recommended but not mandatory)



About Al Mashreq Training

Al Mashreq training Vision is to be the first choice for training in the Gulf. To support this vision, we carefully select highly specialized trainers and competent staff so that the training is delivered to exceed the learners expectation. We have internationally accredited courses that bring value added to clients and learners. Al Mashreq Training will continuously monitor the performance of trainers and learners and will provide the necessary support to enable learners to achieve their qualifications. We will provide all relevant information to learners and clients and answer their queries in a timely manner.

I welcome you once again to Al Mashreq Training and wish you an enjoyable journey throughout your program and success in your training.

Accreditation



Partners



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