KONECRANES®
Lifting Businesses™

CUSTOMER TRAINING COURSE PROGRAMME

OPERATOR TRAINING

PREFACE

PLEASE CONTACT US.

In this brochure, you will find details of the courses available within the Konecranes Port Solutions customer training course programme.

Should you have any further questions about this Konecranes customer training course programme or if you want to order one of our training courses, please do not hesitate to contact us.

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PREFACE

MAKING SKILLS WORK –

DEVELOP YOUR STAFF THROUGH OUR TRAINING COURSES

Making skills work – true to this motto we support you with high quality training course programme to exploit the full potential of your Konecranes Port Solutions products and to boost your productivity.

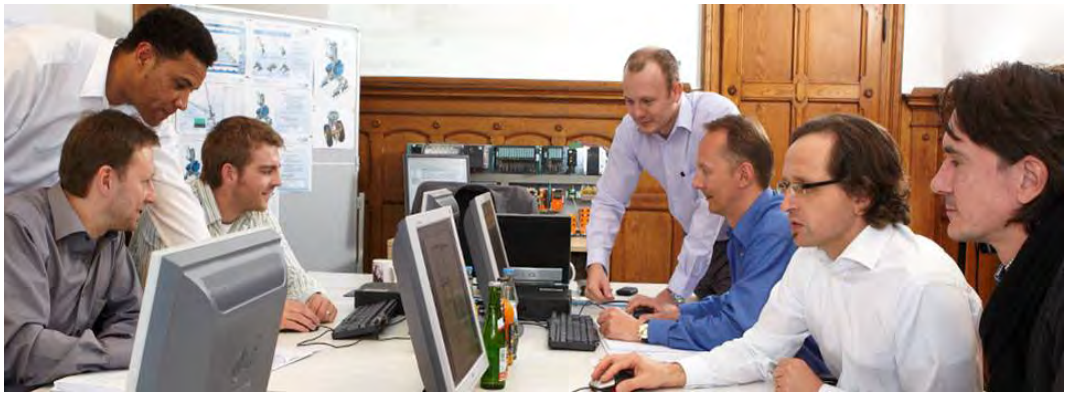
We offer you a comprehensive range of training courses that qualify your staff in the safe and efficient operation and maintenance of Konecranes products and their components. You benefit from our many years of experience. We continuously develop our training courses on the basis of intensive customer interaction and local expertise. With practical work carried out on the products, we ensure that your staff acquires the relevant know-how. We document the trainee's successful completion of the course with our training course certificates, which are recognised by the industry.

The most important highlights

- Modular, practice-oriented training course programme
- German-educated technical training instructors
- Operator training instructors with more than 20 years experience
- State-of-the-art equipment used in our training courses
- Comprehensive training course documentation for each course
- Training courses held at our training centres in
  - Düsseldorf (Germany)
  - Würzburg/Hamburg (Germany)
  - Montceau-les-Mines (France)
- Training courses held on site at your port
- Recognised Konecranes Port Solutions training course certificate

PREFACE

TRAINING CENTRE IN DÜSSELDORF, GERMANY



Highlights:

- Highly qualified, experienced training instructors
- State-of-the-art training workplaces equipped with Notebook and PLC controlled belt model
- Technology simulator to represent the overall crane control system
- Comprehensive training course documentation for each course
- Recognised Konecranes Port Solutions training course certificate

SIMULATOR TRAINING COURSE IN DÜSSELDORF, GERMANY

Highlights:

- Highly qualified, experienced training instructors
- State-of-the-art simulator featuring many operating scenarios that are adapted to Konecranes® Gottwald mobile harbour cranes and excellent physics simulation
- Recognised Konecranes Port Solutions crane operator licence in EC card format and official training course certificate

PREFACE

TRAINING CENTRE IN MONTCEAU-LES-MINES, FRANCE

Highlights:

- Konecranes Port Solutions certified training instructors
- State-of-the-art Konecranes training facility
- Konecranes reach stacker for hands-on training course
- Technical documentation for training course
- Recognised Konecranes Port Solutions training course certificate

TRAINING CENTRE IN WÜRZBURG/HAMBURG, GERMANY

Highlights:

- Highly qualified, experienced training instructors
- Konecranes straddle carriers for hands-on training course
- Detailed training course documentation
- Recognised Konecranes Port Solutions training course certificate

PREFACE

ON-SITE TRAINING COURSE AT CUSTOMER'S SITE

Highlights:

- Highly qualified, experienced training instructors
- Training course in customer's own environment with realistic conditions and following the relevant on-site procedures
- Training directly with customer's product
- Flexible training course structure switching between theory and practice
- Recognised Konecranes Port Solutions training course certificate

CONTENTS

PLEASE NOTE

For all on-site training courses, the respective product must be available.

1 MOBILE HARBOUR CRANE

Konecranes® Simulator training course

The advantages of the Konecranes® simulator training course at a glance:

- No blockage of cranes for productive handling alongside vessels
- Safe work environment - no damage to cranes, no injuries to persons
- Inexpensive - in comparison with training on the real crane
- Experienced training instructors
- Training of hazards and emergency situations
- Simulation of ambient conditions (weather, day/night, …)
- Training on the handling of different cargoes and lifting gear with no need for these to be physically present.
- Easy assessment of crane operator abilities - long-term success checks through repeated assessments
- Licensing of a crane operator by the crane manufacturer

MOBILE HARBOUR CRANE

Modular training concept

For improvement of your container handling performance, occupational safety and efficiency, five training course modules are available, specially tailored and combinable for your own purposes.

MOBILE HARBOUR CRANE

1.1 CRANE OPERATOR ASSESSMENT

Objective:

- Assessment of crane operator applicants
- Assessment of experienced crane operators, including derivation of training recommendations

Number of trainees:

- Max. 4 trainees per day

Duration:

- 2 hours per trainee

Requirement:

- Good hand and eye coordination

Location:

- Training Center Düsseldorf, Germany (Simulator)
- On site (mobile simulator)

During this assessment, each trainee must solve prescribed problems on the crane simulator. These tasks have been specially designed for the purpose of recording the individual performance of each trainee and making an assessment of their abilities. This assessment is carried out with a professional SMS (Student Management System). According to the assessment, a recommendation for further training courses is generated. At the start of the training course, it is ensured that all trainees are informed of the relevant safety guidelines.

Seminar contents:

- Instructions on safety procedures (theoretical)
  - Preface to simulator
  - General remarks about mobile cranes
  - General safety instructions
- Instructions on how to use the simulator
  - Conditions for crane operation
  - General operating functions
- Simulation scenarios
  - Specially prepared scenarios for the assessment of aptitude as a crane operator
  - Precision exercises against the clock for assessment of hand and eye coordination
  - Operation by day and night (exclusion of night blindness as a safety criterion)
- Assessment
  - Creation of a data set in the SMS (Student Management System)
  - Assessment and personalised recommendation for future training courses
  - Start data set for assessment of an improvement curve after further training courses

MOBILE HARBOUR CRANE

1.2 CRANE OPERATOR LICENSE TRAINING

Objective:

- To learn the correct professional handling of a harbour crane

Number of trainees:

- Max. 2 trainees

Duration:

- 3 days

Requirement:

- Good hand and eye coordination

Location:

- Training Center Düsseldorf, Germany (Simulator)

At the start of the training course, the trainees learn the relevant safety regulations, the basic set-up and functions of a Konecranes® Gottwald harbour crane and the checks required before starting operation.

After an introduction to the operation of different crane functions, the trainees practise in realistic simulations the correct operation of the crane during typical handling, maintenance and repair work.

With a final test, their success in learning is evaluated and documented with a Konecranes crane operator licence.

Seminar contents:

- Instructions on safety procedures (theoretical)
  - Preface to simulator
  - General remarks about mobile cranes
  - General safety instructions
  - Legend for notices, warning and prohibition signs
  - Lifting factors, hand signals and radio communication
  - Emergency stop buttons
  - Smoke detector system
  - Dead man switch
  - Daily checks simulated with Oculus Rift
- Instructions on how to use the simulator
  - Conditions for crane operation
  - Conditions for travel operation simulated with Oculus Rift
  - General operating functions

Continued on next page

MOBILE HARBOUR CRANE

Continued from "Crane operator license training" training course programme

- Instructions on how to operate the machine
  - General operating functions
  - Requirements for travel and crane modes of operation
- Instructions on how to use the visualisation
  - Visumatic® symbols/selecting language/setting the time
  - Limit switch test/safe load indicator
  - Hook and spreader selection screen
  - Fault messages
- Basic operation
  - Travelling, steering, braking
  - Stabilisers, propping, levelling
  - Slewing, lifting, luffing
  - Hands-on crane driving experience and handling
- Hook operation
  - Attaching the hook rotator
  - Underslinging the load
  - Hook balance compensation
  - Loading and unloading alongside different types of vessels
- Spreader operation
  - Gravity compensation, telescoping
  - Handling the flippers
  - Locking/unlocking
  - Loading and unloading alongside different types of vessels
- Grab operation
  - Loading and unloading alongside different types of vessels
- Lowering and raising the boom for maintenance work
- Simulation scenarios
  - Container, general cargo and bulk material handling
  - Operation by day and night
  - Operation in good and bad weather conditions
  - Working with banksman
  - Travel and crane modes of operation
  - Radio remote control and tower cab
- Check learning objectives by means of a written test
- Assessment
  - Creation of a data set in the SMS (Student Management System)
  - Survey of individual performance before and after the training course

MOBILE HARBOUR CRANE

1.3 PERFORMANCE TRAINING

Objective:

- Inexperienced crane operators learn the fundamentals of high-performance goods handling with harbour cranes.
- Crane operators with previous experience expand their knowledge to enhance their handling performance.
- Crane operators with experience of operating other crane types are introduced to the special features in the operation of Konecranes® Gottwald harbour cranes.

Number of trainees:

- Max. 2 trainees

Duration:

- 2 weeks

Requirement:

- Good hand and eye coordination

Location:

- Training Center Düsseldorf, Germany (Simulator)

At the start of the training course, the contents of the “Operator Licence” training are explained and the licence is applied for (“1.2 Crane operator license training“ on page 11).

In realistic simulations, the trainees learn and develop their skills for high-performance goods handling with hooks, spreaders or grabs, for example. According to their individual experience, trainees are instructed in different handling scenarios, e.g. by day and by night and in different weather conditions.

Using a large number of scenarios with different types of vessels, terminal layouts and terminal environments, the training course, can be adapted to the individual conditions in the home port.

With a final test, the trainees’ success in learning is evaluated and documented with a Konecranes certificate and a Konecranes crane operator licence.

Seminar contents:

- Contents from “1.2 Crane operator license training“ on page 11

and

- Lifting gear and use of lifting gear
  - Shackle between hoist and cargo
  - Supervision of actions
  - Maintenance and use of lifting gear
  - Calculating the SWL

Continued on next page

MOBILE HARBOUR CRANE

Continued from "Performance training" course programme

- International hand and communication signals
  - Warning signals
  - General moves and signals
  - Vertical/horizontal movement
  - Danger
  - Radio communication
- Travelling and positioning the crane
  - Traveling and crab steering
  - Easy manoeuvring through bottlenecks
  - Positioning the crane alongside vessels for optimum loading and unloading from the hatch
  - Stabiliser pads and beams of the crane
  - Parking the crane safely (shutting down, power cable)
- Pre-use check simulated with Oculus Rift
- Crane driver safety procedure
  - Storm warning
  - Transport of people
  - Load diagram
  - Visibility
  - Communication with technical staff
  - Port and starboard
  - Related tasks
- Crane operation
  - Slewing the crane
  - Combining the movements/boom movements
  - Following pre-determined route with an empty hook
  - Approaching cargo in a correct and safe way
  - Lifting and lowering cargo
  - Placing cargo on trailers
  - Loading and unloading cargo in and out of a hatch
  - Operating and rotating an empty grab
  - Loading and unloading bulk
  - Problem solving

Continued on next page

MOBILE HARBOUR CRANE

Continued from "Performance training" course programme

- ECO driving/working
  - Load antisway
  - Building up movements and reducing movements
  - Positioning of the crane depending on the wind direction
  - Two simultaneous movements instead of three
  - Switching on and off situations
- Simulation scenarios
  - Container, general cargo and bulk material handling
  - Operation by day and night
  - Operation in good and bad weather conditions
  - Working with banksman
  - Travel and crane modes of operation
  - Radio remote control and tower cab
- Check learning objectives by means of a written test
- Assessment
  - Creation of a data set in the SMS (Student Management System)
  - Survey of individual performance before and after the training course

MOBILE HARBOUR CRANE

1.4 SAFETY IMPROVEMENT TRAINING

Objective:

- Experienced crane operators specifically train the safe operation of harbour cranes including behaviour in hazardous and emergency situations.

Number of trainees:

- Max. 2-4 trainees

Duration:

- 1 week

Requirement:

- Good hand and eye coordination
- Experience as crane operator or successful completion of a Performance Training

Location:

- Training Center Düsseldorf, Germany (Simulator)

Building upon the Performance Training course, the trainees refresh their knowledge of safe working with harbour cranes.

In a variety of simulations, the experience of the trainees in the safe handling of goods with hook, spreader or grab, for example, is evaluated. On the basis of the training recommendations derived, the trainees improve their skills in safe goods handling in selected training scenarios, including training courses for hazardous and emergency situations.

With a final test, the trainees' success in learning is evaluated and documented with a Konecranes certificate.

Seminar contents:

- Instructions on safety procedures (theoretical)
  - Preface to simulator
  - General remarks about mobile cranes
  - General safety instructions
  - Legend for notices, warning and prohibition signs
  - Lifting factors, hand signals and radio communication
  - Emergency stop buttons
  - Smoke detector system
  - Dead man switch
  - Daily checks simulated with Oculus Rift

Continued on next page

MOBILE HARBOUR CRANE

Continued from "Safety improvement training" course programme

- Pre-use check simulated with Oculus Rift
  - General daily check (tour of the crane)
  - Safety paths of the crane
  - Engine room
  - Lights, horn, communication systems, etc..
  - Testing all movements before starting to work
  - Parking the crane safely (shutting down, power cable)
- Crane operation
  - Slewing the crane
  - Combining the movements/boom movements
  - Following pre-determined route with an empty hook
  - Approaching cargo in a correct and safe way
  - Lifting and lowering cargo
  - Placing cargo on trailers
  - Loading and unloading cargo in and out of a hatch
  - Operating and rotating an empty grab
  - Loading and unloading bulk
  - Problem solving
- Crane driver safety procedure
  - Storm warning
  - Transport of people
  - Load diagram
  - Visibility
  - Communication with technical staff
  - Port and starboard
  - Related tasks
  - Basic knowledge of vessel structure (cells, gliders, bays)
  - Technical safety procedures
  - Working methods

Continued on next page

MOBILE HARBOUR CRANE

Continued from "Safety improvement training" course programme

- Simulation scenarios
  - Container, general cargo and bulk material handling
  - Operation by day and night
  - Operation in good and bad weather conditions
  - Working with a banksman simulated with Oculus Rift
  - Travel and crane modes of operation
  - Radio remote control and tower cab
- Assessment
  - Creation of a data set in the SMS (Student Management System)
  - Survey of individual performance before and after the training course

MOBILE HARBOUR CRANE

1.5 ON SITE OPERATOR TRAINING

Objective:

- Crane operators receive practical tips and tricks for safe and high-performance goods handling in their familiar surroundings and on their own crane.
- Efficient crane operation for enhanced energy efficiency and minimisation of component wear.
- Crane operators with experience of operating other crane types are introduced to the special features in the operation of Konecranes® Gottwald harbour cranes in their familiar surroundings and on their own crane.

Number of trainees:

- Max. 2 trainees

Duration:

- 2 weeks

Requirement:

- Good hand and eye coordination
- Experience as crane operator or successful completion of a Performance Training)

Location:

- On site

At the start of the training course, the trainees refresh their knowledge of the relevant safety regulations, the basic design and functions of a Konecranes® Gottwald harbour crane and the checks required before starting operation.

In accordance with their individual experience and abilities, the trainees are trained in safe operation and high-performance goods handling with the harbour crane in their own terminal. Taking account of the local conditions, the experienced training instructors give valuable practical tips and tricks for improved handling performance.

Seminar contents:

- Instructions on safety procedures (theoretical)
  - Preface to simulator
  - General remarks about mobile cranes
  - General safety instructions
  - Legend for notices, warning and prohibition signs
  - Lifting factors, hand signals and radio communication
  - Emergency stop buttons
  - Smoke detector system
  - Dead man switch
  - Daily checks

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MOBILE HARBOUR CRANE

Continued from "On site operator training" course programme

- Crane driver safety procedure
  - Storm warning
  - Transport of people
  - Load diagram
  - Visibility
  - Communication with technical staff
  - Port and starboard
  - Basic knowledge of vessel structure (cells, gliders, bays)
  - Technical safety procedures
  - Working methods
- Crane operation in different applications, e.g. with automatic container spreader or grab
  - Slewing the crane with spreader/grab
  - Combining movements with the spreader/grab
  - Operating and rotating the spreader/grab
  - Working with telescopic spreader
  - Work with motor grab or mechanical grab
  - Operating flippers
  - Approaching containers in a correct and safe way
  - Approaching hatches in a correct and safe way
  - Lifting and lowering containers
  - Placing containers on trailers
  - Loading and unloading containers from a deck/in a hatch
  - Handling hatch covers
  - Attachment for over-high flat containers
  - Working with twinlift spreader
  - Problem solving
  - Filling/Approaching hoppers
- ECO driving/working
  - Load antisway
  - Building up movements and reducing movements
  - Positioning of the crane depending on the wind direction
  - Two simultaneous movements instead of three
  - Switching on and off situations

2 AUTOMATED GUIDED VEHICLE (AGV)

Number of trainees:

- Max. 6 trainees

Duration:

- 1.5 days

Location:

- On site

Requirements:

- For the on-site training course an AGV and a test field must be available

The objective of the training is to provide the necessary knowledge and skills to operate an AGV in a safe way. The AGV is the automated container transport system from Konecranes Port Solutions.

Seminar contents:

- Safety instructions
  - Possible hazards caused by automated systems
  - Site specific hazards
  - Communication with the control centre
  - Safe handling of batteries (optional)
- Operation
  - Remote control operation
  - Behaviour during operation
  - Restarting the vehicle in automated mode
  - Recovering the vehicle
  - Recovering the vehicle out of the rack (optional)
  - Functions of the service display
  - Status LEDs

3 STRADDLE & SPRINTER CARRIERS

Number of trainees:

- Max. 2 trainees

Duration:

- 12 days

Location:

- On site

Requirements:

- Straddle or sprinter carriers must be available

The objective of the training course is to provide the necessary knowledge and skills to operate a straddle or sprint carrier in a safe and productive way.

Seminar contents:

- General
  - Understanding the functions
  - Daily checks
  - Travel functions checks
  - Stability, load, determining the centre of gravity
  - Handling the vehicle
  - Safe and efficient driving
  - Dealing with risks
  - Terminal safety regulations
  - Rules of courtesy
- Tour of the vehicle
  - Check the vehicle from both sides and from underneath
  - Access to the vehicle
  - Engine and turbo
  - Brakes
  - Cooling system
  - Lights
- Driving the straddle carrier & sprinter carrier (unloaded)
  - Preventive checks
  - Testing all movements
  - Test 20’, 40’, twinlift spreader
  - Gear speeds
  - Observing and checking environment
  - Risk control

Continued on next page

STRADDLE & SPRINTER CARRIERS

Continued from "Straddle & sprinter carriers" course programme

- Working with the straddle carrier & sprinter carrier (unloaded)
  - Approaching the container
  - Driving parallel over the container
  - Spreader position
  - Spreader on top of container
  - Attaching containers with the hook
  - Driving height
  - Observing and checking environment
  - Positioning the container
  - Centring the spreader
  - Driving height after unloading container
- Working with the straddle carrier & sprinter carrier below crane
  - According to the terminal procedures
- Practice
  - Working 1 high
  - Working 2 high
  - Working 3 high
  - Overheight, overwidth, overlength
- Practice with twinlift spreader
  - Positioning 20' containers
  - Terminal guidelines for twinlift spreaders
- ECO driving/working
  - Theoretical and practical lessons
  - Tyre economy when driving and manoeuvring
  - Starting procedure
  - Parking procedure
  - Turbo saving actions

4 REACH STACKER

Number of trainees:

- Max. 3 trainees

Duration:

- 3 days

Location:

- On site

Requirements:

- Reach stacker must be available

The purpose of the training is to provide the necessary knowledge to handle and operate the reach stacker in order to handle and move containers in a safe and productive way.

Seminar contents:

- General
  - Reach stacker technical knowledge
  - Reach stacker daily maintenance – pre-use check
  - Lifting and lowering containers in a safe way
  - Special technique for loading and stacking containers 4 to 5 high
  - Stability, load, determining the centre of gravity
  - Risk detection and safety
- Theoretical introduction
  - Getting acquainted with the inside of the reach stacker
  - Pre-use check
  - The control panel
  - Symbols (safety and driving symbols)
  - Engine and turbo
  - Hydraulic system
- Practical introduction
  - How to operate the reach stacker
  - The control panel
  - Reach stacker safety instructions
- Working with the reach stacker
  - Driving the reach stacker
  - How to approach the container
  - Positioning the spreader
  - Checking ground conditions for ability to absorb reach stacker movements
  - Tyre economy when driving and manoeuvring

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REACH STACKER

Continued from “Reach stacker“ course programme

- Picking up, lifting and lowering containers
  - Positioning the container in a stable way
  - Safe driving – safety level visibility
  - How to stack containers one high
- Positioning containers two and three high
  - Positioning spreader above container corner casts (twistlocks)
  - Order of manoeuvring (safety height before side movement or rotation)
- Positioning containers four and five high – extra handling
  - Anticipating changes in stability of vehicle
  - Checking ground conditions before stacking five high
  - Operating the joystick (various operating commands)
  - Anticipating the “monkey in the box effect” (uneven loaded cargo effect)
- ECO driving/working
  - Theoretical and practical lessons
  - Tyre economy when driving and manoeuvring
  - Starting procedure
  - Parking procedure
  - Turbo saving actions

5 EMPTY CONTAINER HANDLER (ECH)

Number of trainees:

- Max. 2 trainees

Duration:

- 5 days

Location:

- On site

Requirements:

- An ECH must be available

The purpose of the training is to provide the necessary knowledge to handle and operate the empty container handler (ECH) in order to handle and move empty containers in a safe and productive way.

Seminar contents:

- General
  - ECH technical knowledge
  - ECH daily maintenance – pre-use check
  - Stacking containers in a safe way
  - Stacking 2 containers in 1 move
  - Stacking empty containers 6 and 7 high
  - Use of safety clamps
  - Determining stability for the ECH
  - Risk detection and safety
  - Safety regulations in the terminal
- Theory
  - Pre-use check
  - Introduction to the control cab of the ECH
  - Symbols and controls
  - Engine and turbo
  - Hydraulic system
- Practical introduction
  - How to operate the ECH
  - Control panel
  - Brake test
  - Safety instructions
  - Combining driving and operating the joystick

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EMPTY CONTAINER HANDLER (ECH)

Continued from "Empty container handler (ECH)" course programme

- Working with the ECH
  - Driving with the ECH
  - Approaching a container
  - Use of safety clamps
  - Lifting an empty container
  - Centring the spreader
  - Checking ground conditions for ability to absorb ECH movements
  - Tyre economy when driving and manoeuvring
- Lifting and lowering empty containers
  - Positioning the container in a stable way
  - Safe driving – safety level, visibility
  - How to stack containers one high
- Stacking empty containers 2 and 3 high
  - Positioning spreader above container corner casts
  - Order of manoeuvring (safety height before side movement or rotation)
- Stacking empty containers 4 and 5 high
  - Anticipating changes in stability of vehicle
  - Checking ground conditions before stacking five high
  - Operating the joystick (various operating commands)
- Stacking empty containers 6 and 7 high
  - Anticipating changes in stability of vehicle
  - Checking ground conditions before stacking 7 high
  - Operating the joystick (various operating commands)
- ECO driving/working
  - Theoretical and practical lessons
  - Tyre economy when driving and manoeuvring
  - Starting procedure
  - Parking procedure
  - Turbo saving actions

6 SHIP-TO-SHORE CRANE (STS)

Number of trainees:

- Max. 2 trainees

Duration:

- 4 weeks

Location:

- On site

Requirements:

- Ship-to-shore crane must be available

The objective of the training course is to provide the necessary knowledge and skills to handle and operate a ship-to-shore crane in order to load and unload ships in a safe and productive way.

Seminar contents:

- General
  - Lifting gear and use of lifting gear
  - International hand and communication signals
  - Crane driver safety procedure
  - Crane operation
  - Use of container spreader
  - Risk detection and safety
  - Pre-use check
  - Basic knowledge of vessel structure (cells, gliders, bays)
  - Technical safety procedures
- Tour of the crane
  - Safety paths of the crane
  - Engine room
  - Lights
  - Rails
- Lifting gear and use of lifting gear
  - Shackle between hoist and cargo
  - Supervision of actions
  - Lifting gear maintenance
  - Calculating the SWL

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SHIP-TO-SHORE CRANE (STS)

Continued from "Ship-to-shore crane (STS)" course programme

- Description and function of crane operator checks on crane
  - Storm warning
  - Transport of people
  - Load diagram
  - Visibility
  - Communication
  - Port and starboard
  - Related tasks ship-to-shore crane training
- International hand and communication signals
  - Eye contact
  - Warning signals
  - General moves and signals
  - Vertical movement
  - Horizontal movement
  - Danger
- Practice
  - Driving with the crane
  - Positioning the crane
  - Combining movements
  - Use of container spreader
  - Lifting and lowering containers
  - Handling hatch covers
  - Loading and unloading of containers on a vessel

7 RUBBER-TYRED GANTRY CRANE (RTG)

Number of trainees:

- Max. 2 trainees

Duration:

- 1 week

Location:

- On site

Requirements:

- Rubber-tyred gantry crane must be available

The objective of the training course is to provide the necessary knowledge and skills to handle and operate a rubber-tyred gantry crane (RTG) in order to load and unload containers in a safe and productive way.

Seminar contents:

- General
  - RTG crane operator safety procedure
  - Operating the RTG
  - Risk detection and safety
  - Pre-use check
  - Technical safety procedures
  - Daily inspections and maintenance
- Tour of the RTG
  - Safety path of the RTG
  - Construction
  - Engine room
  - Control panel
  - Controls
  - Safety doors
  - Seat
  - Programmable logic controller (PLC)
  - DGPS (assisted auto steering)
  - Communication system
  - Cameras
  - Anemometer
  - Anti-collision system
  - Remote control (if applied)
  - Lights

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RUBBER-TYRED GANTRY CRANE (RTG)

Continued from "Rubber-tyred gantry crane (RTG)" course programme

- Safety of the RTG operator
- Working with the RTG
  - Starting engine
  - Selecting driving direction and steering
  - Carousel drive steering mode
  - Park wheels mode
  - Operating/securing trolley
  - Trailing cables
- Operating the RTG
  - Daily checks
  - Starting engine
  - Brake test
  - Observing and checking environment
  - Checking cables
  - Checking spreader (20', 30', 40', twinlift)
  - Checking extendable twinlift spreader
  - Driving the trolley
  - Driving the RTG
  - Operating the hoist
  - Operating flippers
  - Lifting containers
  - Transporting containers
  - Stacking containers (up to 5 high)
  - Sway reduction (with and without anti-sway device)
  - Securing trolley position
  - Emergency stop
  - PLC malfunction
  - Combining movements
  - Loading containers on train and truck
  - Parking collision free
  - Engine off and securing trolley
  - Connecting to the external electrical system
  - Anchoring the RTG

8 BULLDOZER

Number of trainees:

- Max. 2 trainees

Duration:

- 3 days

Location:

- On site

Requirements:

- Bulldozer must be available

The objective of the training course is to provide the necessary knowledge and skills to operate bulldozers safely and with improved productivity.

Seminar contents:

- General
  - Equipment and engine
  - Working conditions
  - Risks related to the equipment and its operation
  - Safety and regulations
  - Practical exercises and manoeuvres
  - Assessment of the candidate
- Equipment and engine
  - Hydraulic system
  - Starting procedure
  - Dashboard icons
- Working conditions
  - Preparations
  - Warming up
  - Overview
- Risks related to the equipment and its operation
  - Analysis of the environment
  - Persons and vehicles in the vicinity
  - Types of cargo
  - General working conditions

Continued on next page

BULLDOZER

Continued from “Bulldozer“ course programme

- Safety and regulations
  - General safety conditions
  - Stopping procedure
  - Specific safety conditions
  - International and local regulations
  - Points of attention
- Operating the bulldozer safely and with high productivity
  - Various hands-on exercises
  - Operation in “real world”
  - Extremely challenging situations

9 TERMINAL TRAKTOR

Number of trainees:

- Max. 2 trainees

Duration:

- 2 days

Location:

- On site

Requirements:

- Terminal traktor must be available

The objective of the training course is to acquire the necessary knowledge and skills to work with the terminal traktor in a safe and efficient manner.

Seminar contents:

- General
  - Understanding of the function
  - Daily checks
  - Travel functions checks
  - Stability, load, determining the centre of gravity
  - Handling the vehicle
  - Safe and efficient driving
  - Dealing with risks
  - Eye contact
  - Terminal safety regulations
  - Anticipating slopes
  - Moving off on slopes
- Tour of the vehicle
  - Access to the vehicle
  - Control panel
  - Engine and turbo
  - Brakes
  - 5th wheel
  - Lights
  - Checking the shackle

Continued on next page

TERMINAL TRAKTOR

Continued from "Terminal traktor" course programme

- Driving the vehicle (unloaded)
  - Preventive checks
  - Gear speeds
  - Loading/unloading
  - Cornering
  - Observing and checking environment
  - Risk control
- Working with the vehicle (loaded)
  - Checking chassis
  - Checking 5th wheel
  - Connecting the trailer
  - Hydraulic pump
  - 5th wheel safety procedures
  - Driving forwards/backwards
  - Parking in the dock shelter
  - Risks
  - Disconnecting the trailer
- Practice
  - Working with the terminal traktor

10 COMPACT TRACK LOADER/SKID STEER LOADER

Number of trainees:

- Max. 2 trainees

Duration:

- 3 days

Location:

- On site

Requirements:

- Compact track loader or skid steer loader must be available

The objective of the training course is to provide the necessary knowledge and skills to operate compact track loaders/skid steer loaders safely and with improved productivity.

Seminar contents:

- General
  - Equipment and engine
  - Working conditions
  - Risks related to the equipment and its operation
  - Safety and regulations
  - Practical exercises and manoeuvres
  - Assessment of the candidate
- Equipment and engine
  - Hydraulic system
  - Starting and stopping procedure
  - Dashboard icons
- Working conditions
  - Preparations
  - Warming up
- Risks related to the equipment and its operation
  - Analysis of the environment - persons and vehicles
  - Types of cargo
- Safety and regulations
  - General safety instructions/important points
  - Specific safety conditions
  - International and local regulations
- Operating the compact track loader/skid steer loader safely and with high productivity
  - Various hands-on exercises
  - Operation in “real world”
  - Extremely challenging situations

11 AERIAL WORK PLATFORM

Number of trainees:

- Max. 6 trainees

Duration:

- 2 days

Location:

- Training Center Düsseldorf, Germany
- On site

Requirements:

- For an on-site training course an aerial work platform must be available

The objective of the training course is to provide the necessary knowledge and skills to work with the aerial work platform in a safe and efficient manner.

Seminar contents:

- Theory
  - Checks
  - Technical explanation
  - Safety symbols
  - Personal safety
  - Stability-working with the load diagram
- Practice
  - Preventive checks
  - Starting procedure
  - Driving position
  - Brake test
  - Observing and checking environment
  - Safe driving height
  - Load diagram
  - Driving exercises

12 FORKLIFT TRUCK

Number of trainees:

- Max. 4 trainees

Duration:

- 2 days

Location:

- On site

Requirements:

- Forklift truck must be available

The objective of the training course is to acquire the necessary knowledge and skills to operate a forklift truck in a safe and productive way.

Seminar contents:

- Theory
  - Daily maintenance
  - Technical explanation
  - Forklift truck check
  - Instrument check
  - Safety symbols
  - Personal safety
  - Stability-working with the load diagram
- Practice
  - Preventive checks
  - Starting procedure
  - Driving position
  - Brake test
  - Awareness of the environment
  - Safe driving height
  - Load diagram
  - Operating the control levers and combined driving movements
  - Picking up, transporting, stacking and lowering cargo
  - Approaching cargo and ideal working methods
  - Parking procedure

13 DRIVING LICENCE (FOR GERMANY ONLY)

13.1 AERIAL WORK PLATFORM

Number of trainees:

- Max. 6 trainees

Duration:

- 2 days

Location:

- Training Center Düsseldorf, Germany
- On site in Germany

Requirements:

- For an on-site training course an aerial work platform must be available

The objective of the training course is to provide the necessary knowledge and skills to work with the aerial work platform in a safe and efficient manner.

Seminar contents:

- Theory
  - Checks
  - Technical explanation
  - Safety symbols
  - Personal safety
  - Stability-working with the load diagram
- Practice
  - Preventive checks
  - Starting procedure
  - Driving position
  - Brake test
  - Observing and checking environment
  - Safe driving height
  - Load diagram
  - Driving exercises
- Test
  - Theory test
  - Practical examination

DRIVING LICENCE (FOR GERMANY ONLY)

13.2 OVERHEAD CRANE

Number of trainees:

- Max. 6 trainees

Duration:

- 2 days

Location:

- Training Center Düsseldorf, Germany
- On site

Requirements:

- For on-site training course an overhead crane must be available

The objective of the training course is to provide the necessary knowledge and skills to operate an overhead crane in a safe and productive way.

Seminar contents:

- Theory
  - Technical explanation
  - Load symbols
  - Personal safety
  - Safety symbols
  - Checks
  - Behaviour during operation
  - Load handling
  - Attaching the load
- Practice
  - Preventive checks
  - Starting procedure
  - Observing and checking environment
  - Driving exercises
- Test
  - Theory test
  - Practical examination

DRIVING LICENCE (FOR GERMANY ONLY)

13.3 FORKLIFT TRUCK TRAINING COURSE

Number of trainees:

- Max. 6 trainees

Duration:

- 2 days

Location:

- Training Center Düsseldorf, Germany
- On site

Requirements:

- For on-site training course a forklift truck must be available

The objective of the training course is to acquire the necessary knowledge and skills to operate a forklift truck in a safe and productive way.

Seminar contents:

- Theory
  - Daily maintenance
  - Technical explanation
  - Forklift truck check
  - Instrument check
  - Safety symbols
  - Personal safety
  - Stability-working with the load diagram
- Practice
  - Preventive checks
  - Starting procedure
  - Driving position
  - Brake test
  - Awareness of the environment
  - Safe driving height
  - Load diagram
  - Operating the control levers and combined driving movements
  - Picking up, transporting, stacking and lowering cargo
  - Approaching cargo and ideal working methods
  - Parking procedure
- Test
  - Theory test
  - Practical examination

DRIVING LICENCE (FOR GERMANY ONLY)

13.4 AGV AUTOMATED GUIDED VEHICLE

Number of trainees:

- Max. 6 trainees

Duration:

- 1.5 days

Location:

- On site

Requirements:

- Forklift truck driving license
- For the on-site training course an AGV and a test field must be available

NOTE

If you do not have a forklift driving licence, we provide a **combined 3-day training course.**

Seminar contents:

- Safety instructions
  - Safety symbols
  - Personal safety
  - Checks
  - Safe handling of batteries (optional)
- Operation
  - Remote control operation
  - Behaviour during operation
  - Recovering the vehicle (theoretical)
  - Functions of the service display
  - Status LEDs
- Test
  - Practical examination

DRIVING LICENCE (FOR GERMANY ONLY)

13.5 CRANE OPERATOR TRAINING

Objective:

- To learn the correct professional handling of a harbour crane

Number of trainees:

- Max. 2 trainees

Duration:

- 3 days

Requirement:

- Good hand and eye coordination

Location:

- Training Center Düsseldorf, Germany (Simulator)

At the start of the training course, the trainees learn the relevant safety regulations, the basic set-up and functions of a Konecranes® Gottwald harbour crane and the checks required before starting operation.

After an introduction to the operation of different crane functions, the trainees practise in realistic simulations the correct operation of the crane during typical handling, maintenance and repair work.

With a final test, their success in learning is evaluated and documented with a Konecranes crane operator licence.

Seminar contents:

- Instructions on safety procedures (theoretical)
  - Preface to simulator
  - General remarks about mobile cranes
  - General safety instructions
  - Legend for notices, warning and prohibition signs
  - Lifting factors, hand signals and radio communication
  - Emergency stop buttons
  - Smoke detector system
  - Dead man switch
  - Daily checks
- Instructions on how to use the simulator
  - Conditions for crane operation
  - Condition for travel operation
  - General operating functions

Continued on next page

DRIVING LICENCE (FOR GERMANY ONLY)

Continued from "Crane operator training" course programme

- Instructions on how to operate the machine
  - General operating functions
  - Requirements for travel and crane modes of operation
- Instructions on how to use the visualisation
  - Visumatic® symbols/selecting language/setting the time
  - Limit switch test/safe load indicator
  - Hook and spreader selection screen
  - Fault messages
- Basic operation
  - Travelling, steering, braking
  - Stabilisers, propping, levelling
  - Slewing, lifting, luffing
  - Hands-on crane driving experience and handling
- Hook operation
  - Attaching the hook rotator
  - Underslinging the load
  - Hook balance compensation
  - Loading and unloading alongside different types of vessels
- Spreader operation
  - Gravity compensation, telescoping
  - Handling the flippers
  - Locking/unlocking
  - Loading and unloading alongside different types of vessels
- Grab operation
  - Loading and unloading alongside different types of vessels
- Lowering and raising the boom for maintenance work
- Simulation scenarios
  - Container, general cargo and bulk material handling
  - Operation by day and night
  - Operation in good and bad weather conditions
  - Working with banksman
  - Travel and crane modes of operation
  - Radio remote control and tower cab
- Check learning objectives by means of a written test
- Assessment
  - Creation of a data set in the SMS (Student Management System)
  - Survey of individual performance before and after the training course

Notes

Notes

Notes

Konecranes is a world-leading group of Lifting Businesses™, serving a broad range of customers, including manufacturing and process industries, shipyards, ports and terminals. Konecranes provides productivity enhancing lifting solutions as well as services for lifting equipment of all makes. The Group has 18,000 employees at 600 locations in 50 countries. Konecranes is listed on Nasdaq Helsinki (symbol: KCR).

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