C010

COURSE OBJECTIVES

Course Objectives for C010

Telescopic handler: all sizes excluding 360 slew

It is envisaged that by the end of this course of training the learner will be able to answer questions on and perform the following:

- Have a basic understanding of the industry, the dangers of working in the industry and their responsibilities as a plant operator - the factors that help maintain a safe working environment in the construction industry, and their responsibilities as a telescopic handler operator
- Have a working knowledge of the manufacturer's handbook for the particular machine to be used and other relevant sources of information - identify and extract information from the manufacturers' handbook/operator's manual, and other information sources including digital
- Be able to locate and identify the major components of the machine and explain their functions - locate and identify the major components, signs and decals and all controls of the telescopic handler and explain their functions
- Be able to locate and identify steering, driving and braking controls and explain their functions
- Conduct all pre-operational checks in accordance with manufacturers and legislative requirements
- Identify and maintain personal protective equipment (PPE) and appropriate safety control equipment for a telescopic handler operator use
- Safely mount and dismount the machine - safely get in to and out of the telescopic handler
- Prepare the telescopic handler for movement
- Start and stop the engine and safely move the machine off and stop it safely
- Configure the machine for travel and manoeuvre it safely laden and unladen, over varying terrain, rough ground, inclines, in open and confined areas - travel and manoeuvre the telescopic handler across varying terrain and inclines, laden and unladen
- Conduct all necessary safety checks at the work area - conduct all necessary safety checks at the loading and unloading areas
- Manoeuvre the machine to the work area and correctly configure in readiness to carry out lifting and load handling tasks - manoeuvre, prepare and configure the machine to pick up a range of loads
- Carry out lifting and load handling tasks
- Lift and transfer unit-type loads accurately and safely at different locations
- Load and unload external transport safely - place and remove loads from a vehicle
- Fit, adjust and or remove attachments
- Environmental considerations of machine use
- Demonstrate knowledge and understanding of loading and unloading procedures for machine transportation
- Carry out all end of shift and shut down procedures

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LEARNING OUTCOMES

Have a basic understanding of the industry, the dangers of working in the industry and their responsibilities as a plant operator	• Explain the structure of the course and the need to comply with your instructions at all times • why the industry has many hazards and why safe working practices must be adopted and maintained • why personal health and safety is not just physical injury and can include the effects of noise and vibration. All of which can lead to lost time, lost income, expense for the employer, fines, custodial sentences etc. • Health & Safety at Work Act 1974, Provision and Use of Work Equipment Regulations (PUWER), Management of Health and Safety of Work (MHSW) Regulations, Construction (Design & Management) Regulations (CDM), Vibration at Work Regulations, Road Traffic Act, HSG144, LOLER, HSG47, L117 etc. in accordance with risk assessments, method statements, codes of practice and other relevant legislation, regulations, and industry good practice • operators' moral, legal, and environmental obligations • reporting structures, the importance of good communication on site (colleagues, management, and other workers on site) • previous incidences involving relevant plant and pedestrians • working with other related roles e.g. marshallers, supervisors, other plant operatives, other occupations, and support workers
Have a working knowledge of the manufacturer's handbook for the particular machine to be used	• Explain the importance of the manufacturer's handbook and that it will be used throughout the course. Stress that it has to be used in alliance with all relevant legislation • Use of the operator's manual (for the specific machine) during the practical elements of training to identify key preparation, operational and safety aspects of the machine • types of information sources including machine control systems
Be able to locate and identify the major components of the machine and explain their functions	• Explain the different types of components • Explain the function of the components and how they all contribute to the safety and operational integrity of the machine • Explain, power units, hydraulic systems, counterweight, stability, wheels / tyres, mast, carriage, fork arms / attachments, safety systems etc • the purpose of principal components, the basic construction, controls, and terminology • how correct and sympathetic use of the controls can ensure efficiency and safety of the machine and help prolong machine life by reducing wear and tear • purposes of Roll Over Protection Systems (ROPS) and Falling Objects Protection Systems (FOPS) and other protection systems

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LEARNING OUTCOMES

Be able to locate and identify steering, driving and braking controls and explain their functions	• Explain the different controls and their functions • Explain how correct and sympathetic use of the controls can ensure safety and stability of the machine and help prolong machine life by reducing wear and tear. Refer to the manufacturer's handbook, codes of practice, capacity plate, decals
Conduct all pre-operational checks in accordance with manufacturers and legislative requirements	• Explain the importance of pre-operational checks and legal implications of using a machine without having checked it. Go through the sequence of checking. Use manufacturer's handbook, check sheet, defect reporting procedure etc. • complete all pre-start and running checks before any activity takes place, including visual checks for damage, functionality, and effectiveness • checking all componentry systems are fully functional, including mechanical, hydraulic, pneumatic, electrical and electronic etc • replenish fuels, fluids and lubricants, and undertake grease-based lubrication activities • manufacturers periodic checks and operator level maintenance requirements • defect reporting requirements • carry out routine adjustments • safety systems functions including emergency stop • health and safety requirements when undertaking basic maintenance activities including personal protection equipment (PPE) • check condition and function of seatbelt and any other restraining equipment • check condition and function of any lighting and warning systems • requirements for dealing with fluid spills including prevention and clean-up methods
Identify and maintain personal protective equipment (PPE) and appropriate safety control equipment for a telescopic handler operator use	• What safety control equipment/PPE should be worn / used for machine operations and include the following: suitable safety footwear, ear defenders, face / eye protection, dust mask, suitable gloves, overalls, hard hat, respiratory protective equipment (RPE), protective clothing etc. Appropriate use of local exhaust ventilation (LEV), i.e. in confined spaces • Why weather conditions, including heat and cold, can determine what PPE is worn when using specific machine and the personal effects of incorrect equipment

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LEARNING OUTCOMES

Safely mount and dismount the machine	• Explain the following fully: Correct mounting procedure, observations • working at height requirements • safe use of all hand holds and steps • facing the machine when getting in to and out of the telescopic handler for operational and maintenance purposes • effects of continually getting in to and out of the telescopic handler e.g. fatigue, increased risk of falling etc. • safe areas to get in to/out of the telescopic handler e.g. ground location, other vehicle movements etc • procedures for accessing the telescopic handler when carrying out adjustment and maintenance activities
Prepare the telescopic handler for movement	• Use of seatbelts and other restraining equipment • adjustment of seating position and mirrors • checks on steering (including multi-directional steering modes), braking, transmission, loader components e.g. boom, extension and carriage tilt checks, loader control lock-out systems, stabilisers, chassis levelling • longitudinal stability aids checks e.g. rated capacity indicator (RCI) / load movement indicator (LMI) / load movement control (LMC) / limiters etc. and how information is supplied • starting procedures • types of visibility aids and what factors can affect clear, all-round vision • where and why effective vision, including mirror positioning is extremely important • how and where issues can arise when vision is limited during operation • warning beacons and other safety systems / lights are operable • legislative requirements for travelling on the public highway • carrying of passengers / non-authorised personnel • how tyre condition, pressures, sizes and ratings etc. can affect machine stability
Start and stop the engine and safely move the machine off and stop it safely	• Explain and demonstrate the following: Correct starting and stopping procedure in accordance with manufacturer's recommendations • Correct procedure for moving off and stopping

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LEARNING OUTCOMES

Configure the machine for travel and manoeuvre it safely laden and unladen, over varying terrain, rough ground, inclines, in open and confined areas

- Explain and demonstrate the following fully: Safe use of steering, driving and braking controls, travel / park position
- Gear ratios
- Good visibility and observations
- Execute turns left and right
- Lateral stability issues when cornering
- Steering configurations – 2-wheel steer, 4-wheel steer, crab steer
- how travel speeds and gear selection affect working efficiency, stability, safety, and emissions
- issues which can occur if departing from designated travel routes and work areas/restricted zones • types of underground services and the effects of travelling loaded machines near to/over services
- effects of travelling close to embankments and trenches
- travelling over various types of terrain, replicating typical site-type surfaces (loaded and unloaded)
- travelling up, down on inclines (loaded and unloaded) including lateral and longitudinal stability
- how certain types of surfaces can affect traction, particularly on inclines
- machine configuration when travelling on steep inclines
- how travelling on uneven and uncompacted surfaces affect stability
- impact of changes to centre of gravity (loaded and unloaded) when travelling up, down and across inclines
- dangers of travelling across inclines
- effects of travelling with a raised boom
- load integrity and security whilst travelling
- giving way to loaded machines
- travelling with large surface-area loads and wide loads
- precautions and obstructions on travel routes including overhead utilities etc
- regulative requirements for travelling near to or under overhead power lines
- awareness of other machines and workers

Conduct all necessary safety checks at the work area

- Explain and demonstrate the following fully: Ground conditions – stability issues
- Hazards – overhead hazards, power lines etc.
- Condition of loads – load centres, centre of gravity, bulk stacking etc.
- Weight of loads – capacity plate, RCI
- Condition of racking – SEMA code, Loading tower
- safety checks that must be carried out to ensure the loading area and unloading area are clear of hazards

continued

LEARNING OUTCOMES

Conduct all necessary safety checks at the work area (cont.)	• loading and unloading in an area which is segregated from other activities including restricted zone requirements • requirements for sufficient manoeuvring area for the machine with a load • how different types of ground conditions may affect the stability to support the telescopic handler and load weight, to maintain machine stability • communication requirements and methods with slinger / signallers • working in hours of darkness and lighting requirements • people / plant interface, procedures and dangers of allowing others near to a working machine
Manoeuvre the machine to the work area and correctly configure in readiness to carry out lifting and load handling tasks	• Explain and demonstrate all safety procedures to be adopted including: Observations to be made prior to and during manoeuvring machine • Correct machine configuration • Check ground condition • Work specification – loads to be lifted or transferred • Correct fork spacing to equally support loads • Use of stabilisers if fitted • the correct use and application of steering, transmission and braking controls • the importance of maintaining good visibility • the correct use of all loader hydraulic controls including boom raise / lower, extension and carriage tilt • correct machine configuration for different load types • what is a lift plan and typical information detailed in the plan • load charts, load centres/centres of gravity, lifting capacities relevant to reach and height • use of stabilisers and levelling systems • checking ground conditions to support the machine • determining the total weight to be lifted for the height and reach • methods of establishing weight of loads • factors that can impact the lateral and longitudinal stability including with raised boom, overloading, ground, and levelling requirements • the correct fork spacing to equally support loads • requirements and restrictions with the use of working platforms including integrated and non-integrated types • prior confirmation on where each load needs to be transported to and where to be placed • how stabilisers and increase stability • aligning and entering accurately to prevent damage to a load

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LEARNING OUTCOMES

Carry out lifting and load handling tasks	• Explain and demonstrate procedures to be adopted including: • Correct use of hydraulic controls • Correct use of tilt • Correct stacking procedures • Legislation, ACOP, HSE Guidance, Manufacturer's handbook • Smooth use of hydraulics at height – stability
Lift and transfer loads accurately and safely at different locations	• Explain and demonstrate procedures to be adopted including: • Clear visibility • Communication system – signals etc • Accurate positioning of machine • Maintaining safety and stability of machine during operations • Safe positioning of loads • keeping within designated travel routes • maintaining full observation • executing full turns to the left and right • lateral stability issues when cornering with a load • procedures for stacking of loads • lifting of unit-type loads including palleted and un-palleted • undercutting when lifting and placing loads • reasons for smooth use of all hydraulic controls, particularly at height • factors that affect safe and effective transportation of loads • loading-out tower requirements • actors and examples that determine where loads can and cannot be placed • explain methods of communication, radio protocol, hand signals etc for unit loads • use of stabilisers
Load and unload external transport safely	• Explain and demonstrate the following: Different types of vehicle / trailer • Vehicle capacities • Weight distribution • Communication with vehicle driver • Undercutting • Hazards – ground hazards, overhead hazards • different types of vehicle / trailers • vehicle capacities • weight distribution • communication with vehicle driver • loading and unloading sequences • undercut loads when lifting and placing of loads • proximity hazards including ground hazards, overhead hazards and those on the transporting vehicle due to the condition of the vehicle bed

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LEARNING OUTCOMES

Fit, adjust and or remove attachments	• Explain the following: Fork arm adjustment to take equal weight • Extension forks • Load centres • Various other attachments if applicable • De-rating – capacity plate, manufacturer's handbook • typical attachment types and function • function, use and precautions for quick-hitch systems • attachment and removal procedures • machine configuration and positioning • securing requirements and essential pre-use checks
Environmental considerations of machine use	• Health and social reasons to reduce machine emissions • government industry zero emission initiatives • what 'tailpipe' emissions are caused by compression ignition (CI) diesel engines during internal combustion • air quality and the component gases of air • how engine emissions, including particulate matter, affect air quality and the effects on human and environmental wellbeing • measures to reduce emissions during operations including alternative / low emission fuels, fuel treatments and particulate filtration systems etc • efficient use of the machine and when and how minimising engine use can aid air quality and fuel savings • eco-friendly oils, fluids and lubricants • fuel-saving techniques for specific item of plant • appropriate disposal of waste • spillage procedures
Demonstrate knowledge and understanding of loading and unloading procedures for machine transportation	• Explain procedures to be adopted including: Different types of transport vehicle • Positioning of load on vehicle • Load security • Use of Banksman • Environmental conditions • procedures for preparing the machine for loading onto a transporter • traction and surface preparation requirements • understanding of agreed methods of communication between the plant operator and others • working at height requirements when driving onto or off a transporter bed

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LEARNING OUTCOMES

Carry out all end of shift and shut down procedures

- Explain and demonstrate procedures to be adopted including: Safe parking
- Shut down procedures and machine security
- types of safe locations, areas, and ground / terrain types where machine may be parked and should not be parked
- reasons for ensuring safe parking and unintentional movement and ground support requirements
- carrying out parking, shut down and isolation requirements according to manufacturer's instructions
- reasons for machine isolation including security and non-authorised use by others
- use of anti-vandalism equipment

**The learning outcomes listed should not be considered in isolation and may be added to in order to accurately reflect the learner's duties and working environment*