Tower Crane

A04

Learning for CPCS

OUTCOMES

Through a combination of targeted training and experience, an individual with the tower crane will be able to:

Roles and responsibilities	• Describe the nature of the sector of industry and their role and responsibilities as a plant operator
Preparing for work	• Name and explain the purpose of principal components, the basic construction, controls and terminology • Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation • Explain all relevant documentation • Undertake all pre-use checks and place the crane into service • Explain procedures that must be taken if accessing the jib for inspection and maintenance purposes
Setting up for work	• Configure the crane for lifting duties • Explain the reasons for changing the number of falls of rope • Explain action required for hazards and overhead services
Working tasks	• Programme / set-up Rated Capacity Indicators and/or other load / distance indicators for lifting duties • Lift various loads using the full radius and slewing capabilities of a crane • Accurately place loads • Minimise the swinging of loads • Move loads through crane travel (where applicable) • Comply with signals and instructions • Maintain safe working situations
Shutting down	• Carry out out-of-service and securing procedures

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SYLLABUS

	Learning outcomes	Training content	
Roles and responsibilities	• Describe the nature of the sector of industry and their role and responsibilities as a plant operator	• Industry type • Customer / client needs • Sector contribution • Role • Cab hygiene and environmental issues • Social responsibilities • Lifelong skills • Reporting structures	• Communication with colleagues / management / other trades • Health and Safety at Work Act • Environmental issues • Other trades • Working practices
Preparing for work	• Name and explain the purpose of principal components, the basic construction, controls and terminology	• Differing Types • Functions and applications • Power units / drive systems • Electrical systems • Stability / bases / mountings • Counterweights • Jibs / trolleys	• Hoisting gear / ropes • Construction • Erection / dismantling process • Safety systems • Slewing arrangements • Attachments • Connection methods (structures)
	• Conform with manufacturer's requirements as per the operator's handbook, other types of information source and relevant regulations and legislation	• Operator's Manual • Duties Charts • Machine decals • Health and Safety at Work Act • PPE • Codes of Practice • Site plans / drawings • Lifting requirements and limitations	• Lift plans • Method statements • Risk assessments / COSHH • Inspection and reporting forms / procedures
	• Explain all relevant documentation	• Test certificates	• Thorough examination certificates
	• Undertake all pre-use checks and place the crane into service	• Regular and non-scheduled maintenance procedures • Environmental restrictions	• Access / egress (to the cab) • Sequence of pre-use checks • Defect reporting
	• Explain procedures that must be taken if accessing the jib for inspection and maintenance purposes	• Accessing • Harnessing / Security • Retrieval	• Authority / approval • Working at height

SYLLABUS (continued)

	Learning outcomes	Training content	
Setting up for work	• Configure the crane for lifting duties	• Required configuration (lift plan) • Lift controls	• Environmental conditions • Site procedures • Hazards
	• Explain reasons for changing the number of falls of rope	• Duties • Load capacity / line speeds	• Limitations • Different methods
	• Explain actions required for hazards and overhead services	• Types of typical services / hazards • Warning / identification systems • Reporting procedures for damage to services	• Minimum distances and clearances • Inter-arcing • Motion limiters • Multiple crane use / crane co-ordination
Working tasks	• Programme / set Rated Capacity Indicators and/or other load / distance indicators for lifting duties	• Types of RCI / LMI / distance indicators • Regulations / legislation • Principles of operation • Lifting duties	• Function and application of common types • Testing, setting / programming for different duties
	• Lift various loads using the full radius and slewing capabilities of a crane	• Duties charts • Lifting accessories and slinging requirements • Lift plans • Lifting controls • Jib deflection • Signalling / following instructions • Hazards	• Stability • Trial lifts • Load stability / security • Visibility • Environmental conditions / wind effects • Load swings • Falls of rope
	• Accurately place loads	• Ground conditions / hazards • Visibility • Stability • Load swings	• Signalling / following instructions • Out-of-sight lifts • Protection of lifting accessories
	• Minimise the swinging of loads	• Rope length • Techniques • Observation / anticipation	• Stability • Environmental • Slew speeds

SYLLABUS (CONTINUED)

	Learning outcomes	Training content	
Working tasks (continued)	• Move loads through machine travel (where applicable)	• Duties charts • Configuration • Stability • Route / ground condition • Load swing	• Load integrity / security • Visibility • Hazards • Regulations / legislation
	• Comply with signals and instructions	• Methods and types of signals • Methods of verbal instruction • Multiple signalling	• Electronic communication / setting-up • Codes of Practice • Radio protocol
	• Maintain safe working situations	• Stability • Load swings	• Load security • Hazards
Shutting down	• Carry out out-of-service and securing procedures	• Shut down procedures • Environmental / excessive winds	• Jib positioning / free braking • Security

NOTE: The listed training content should not be considered exhaustive and subjects may be added to reflect the individuals' working environment.