



Australian Government

AHCARB324 Use cranes to access and dismantle trees

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 5.0.

Application

This unit of competency describes the skills and knowledge required to use cranes to access and dismantle trees in close proximity to assets and in difficult or hazardous circumstances.

The unit applies to individuals who work in arboriculture under broad supervision and take responsibility for their own work. They use discretion and judgement in the selection, allocation and use of available resources and for solving problems

The arboriculture industry requires that all tree work with a crane is undertaken according to preferred industry practices (as outlined in the Companion Volume).

Legislation, regulations and by-laws relating to the treatment and removal of trees, and the use of cranes, apply in some states and territories.

Pre-requisite Unit

The prerequisite unit of competency for this unit is:

- CPCCDO3011A Perform dogging.

Note the following chain of prerequisites that also applies to this unit.

Unit of competency	Prerequisite requirement
CPCCDO3011A Perform dogging	CPCCOHS2001A Apply OHS requirements, policies and procedures in the construction industry

Unit Sector

Arboriculture (ARB)

Elements and Performance Criteria

Elements	Performance Criteria
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<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan for the use of cranes for tree access and dismantling	1.1 Identify requirements for crane assisted tree work 1.2 Determine the requirements for crane access 1.3 Inspect site to identify site conditions, features and hazards that may affect crane set-up and operation 1.4 Determine crane type and size, and develop plan for crane assisted tree work 1.5 Communicate requirements to crane operator to confirm plan 1.6 Confirm availability of emergency procedures, rescue personnel and equipment
2. Prepare to conduct crane work	2.1 Determine access to site and gain approval from stakeholders 2.2 Confirm site preparations and notification of local residents and authorities according to dismantling plan 2.3 Liaise with crane operator and crane crew to confirm set-up, clearances from electrical services and working area 2.4 Undertake a site-specific job safety analysis (JSA) and record and implement control measures according to workplace safety procedures 2.5 Liaise with crane operator to determine load limit at working radius
3. Prepare arborist equipment ready for dismantling operations	3.1 Inspect trees for defects to inform planned tree access and dismantling strategy 3.2 Discuss strategy with crane operator and crew to confirm site, environment and crane working limitations 3.3 Determine lowering and processing zones and communicate to work team 3.4 Carry out pre-operational and safety checks on arboriculture tools and equipment required for dismantling 3.5 Select, check and use personal protective equipment
4. Access trees to conduct work	4.1 Select and use safe access methods to conduct crane dismantling work 4.2 Use climbing techniques to access trees to conduct crane work 4.3 Use crane to access trees using an approved crane access method according to industry codes, procedures and legislative and regulatory requirements 4.4 Communicate with crane operator and observer using agreed communication methods

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	4.5 Use climbing techniques to access work positions and perform dismantling operations
5. Prepare for crane dismantling and attach crane to tree sections	5.1 Maintain communication with crane operator and work team during operations using agreed communication methods 5.2 Use hand and whistle signals to communicate with crane operator according to industry standards 5.3 Select and apply crane lifting methods and sequence according to dismantling strategy and safety procedures 5.4 Determine weight of each tree section and communicate to crane operator 5.5 Attach crane with lifting gear to each tree section according to load limits, centre of gravity and planned lifting operation 5.6 Communicate pre-tension requirements to crane operator
6. Use crane to dismantle tree	6.1 Perform cuts to remove tree sections according to desired lifting operation 6.2 Control and monitor tree section removal and direct crane operator throughout lifting operations 6.3 Communicate with crane operator regarding lifting operation and adjust dismantling strategy 6.4 Apply arborist rigging and felling techniques when crane support is not required 6.5 Adjust work pace and methods to match processing capacity of ground crew and environmental conditions 6.6 Perform final dismantling and lifting operations for tree removal work according to specifications
7. Complete tree dismantling procedures	7.1 Confirm completion of tree dismantling work with crane operator according to workplace procedures 7.2 Clean, check and store tools and equipment according to workplace procedures 7.3 Record completion of tree removal, and report to stakeholders according to workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCARB324 Use cranes to access and dismantle trees	Not applicable	New unit	Newly created

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCARB324 Use cranes to access and dismantle trees

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has fully dismantled at least one tree of a minimum 15 metres in height and with a canopy spread of 10 metres or greater using a crane. The tree must be in close proximity to structures or other assets. The individual must take charge of the process from planning to completion, including the safeguarding of assets.

There must also be evidence that in dismantling the tree, the individual has:

- controlled the process from start to finish
- devised a plan, communicated the plan to work team and crane operator, and executed the plan
- selected and implemented appropriate rigging strategy and sequence for crane work
- planned and dismantled the tree without damage to the assets
- selected appropriate tree components and attached rigging to crane correctly
- performed accurate cuts appropriate to safe crane lifting operations
- maintained constant communication with work team and crane operator
- completed the work safely.

There must also be evidence that the individual has:

- identified work requirements and obtained relevant compliance approvals
- determined the site access, inspected site for safety hazards for crane set-up and dismantling works and confirmed working areas and set-up with crane operator and crew
- undertaken a site-specific job safety analysis and recorded and implemented control measures including:
 - confirmed the availability of emergency procedures, rescue personnel and equipment
 - appointed a spotter to ensure crane clearances from overhead services and obstructions
 - selected, checked and used personal protective equipment
 - selected and used safe access methods for crane dismantling work
- carried out pre-operational and safety checks on arborist tools and equipment

- accessed tree and safe working positions and communicated with work team throughout dismantling operations
- performed dismantling operations including:
 - determined weight of tree section and communicated requirements to crane operator
 - attached tree section to crane with lifting gear according to load limits, centre of gravity and lifting operations
 - controlled and monitored tree section removal and directed crane operator throughout operation
 - applied arborist rigging and felling techniques
- adjusted work pace and methods to match ground crew processing operations
- confirmed completion of dismantling work with crane operator
- cleaned, checked and stored tools and equipment according to workplace procedures
- recorded completion of works and reported to stakeholders.

All tree dismantling work with a crane is required to be performed according to preferred industry practices (as outlined in the Companion Volume).

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- requirements for crane access and safe operation and limitations when deciding on dismantling operations with cranes, including:
 - sizes and weight of cranes for purpose
 - types and methods for stabilising and impact on surfaces
 - surface structures, including: fill, storm water pipes, retention tanks, driveways
 - soil and ground stability and slope
 - clearances from buildings and structures
 - no-go zones above and near electrical conductors
 - clearances from other trees and potential root zone damage
 - distance of reach to weight
- regulatory requirements for use of cranes on sites, including:
 - local government roadside permits
 - energy authority permits
 - preferred industry practices (as outlined in the Companion Volume) for tree dismantling work
- selection criteria for using cranes for arboriculture work
- arborist requirements for crane set-up, including:
 - crane footprint and set-up area
 - working area
 - working radius
 - largest estimated lift

- order of dismantle
- workplace health, safety, site, environmental and traffic control measures, including:
 - completing JSAs for site-specific risks
 - purpose of first aid and rescue personnel, equipment and procedures
 - pre-operational and safety checks, on ropes, harnesses, tools and equipment
 - personal protective equipment used when climbing
- work planning procedures and collaboration when working with crane operator, including:
 - preparing a dismantling strategy
 - tree access procedures and resources
- arborist climbing equipment and techniques to access and work in trees
- purpose, function, selection, tying, dressing, setting and finishing of arborist knots used for climbing techniques
- safety when climbing trees, including:
 - safe working limits, ropes and equipment
 - defects in ropes, tools and equipment
 - controlled descent operations
 - controlled removal of access equipment
 - forces applied to anchor points during access and work positioning using MRT and SRT
 - forces applied at primary anchor points and at redirects
- hazards to avoid when working within the tree canopy near cranes, including:
 - spatial awareness for crane and cabling components
 - power line, no-go zones, safe approach distances and vegetation clearances
 - tree structural defects
 - animals or insects
 - deciding on low-risk access routes
- access to tree canopy using cranes, including:
 - local state or territory legislation and regulations
 - attaching to the crane hook
 - safety implications
- communications strategies between ground crews, crane operators or crane crew, including:
 - hand and whistle signals
 - UHF or Bluetooth communications
 - crane industry standards for communication
- attaching tree components and loads to crane hooks, including:
 - crane attachment slings
 - chains and cables
 - dead-eye slings
 - estimating load and balance of tree components

- controlling tree sections during crane lift, including:
 - controlling balance
 - methods for controlling branches, leaders and trunk
- dismantle techniques for branches and trunk sections, including:
 - cut and drop method
 - directional felling
 - arborist rigging techniques
- records and reporting procedures for crane supported tree dismantling operations.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - a crane and a tree to be dismantled as stipulated in the performance evidence
- resources, equipment and materials:
 - rigging equipment
 - personal protective equipment
 - first aid and emergency response equipment
 - crane slings and rigging equipment
 - pruning and cutting tools and equipment
- specifications:
 - workplace procedures and instructions for dismantling trees with cranes
 - legislation, regulations, codes of practice and standards relating to crane use and dismantling of trees
 - preferred industry practices (as outlined in the Companion Volume) for tree dismantling work
 - documentation for planning, obtaining permits and reporting tree dismantling work with cranes
- relationships:
 - work team and crane operator.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards. In particular, assessors must have:

- arboriculture vocational competencies at least to the level being assessed
- current arboriculture industry skills directly relevant to the unit of competency being assessed.

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