



Australian Government

AHCARB317 Dismantle trees

Release: 1

AHCARB317 Dismantle trees

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 dismantle trees in close proximity to structures and other assets and in difficult or hazardous circumstances using a specialised range of methods, tools, equipment and materials and requiring the application of extensive arboricultural knowledge.

The unit applies to individuals who work in arboriculture under broad direction 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 dismantling work 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 apply in some states and territories.

Pre-requisite Unit

Nil

Unit Sector

Arboriculture (ARB)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare for tree removal	1.1 Determine access to site and confirm approval for works to commence 1.2 Confirm site preparations, including notification of stakeholders

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.3 Undertake a site-specific job safety analysis (JSA), and record and implement site-specific control measures according to workplace safety procedures 1.4 Inspect tree to identify structural defects and appropriate removal methods 1.5 Determine a dismantling strategy identifying potential drop or lowering zones and providing safety zones for load, tools and equipment 1.6 Review dismantling strategy with work crew and adjust according to feedback 1.7 Protect property and vegetation assets in the work zone from potential damage 1.8 Confirm availability of emergency response resources and safety procedures 1.9 Select and prepare tools, equipment and machinery and conduct pre-operation and safety checks 1.10 Select, check and use personal protective equipment
2. Design and prepare rigging system	2.1 Design rigging system according to dismantling strategy 2.2 Select appropriate anchor and attachment points 2.3 Estimate force applied to tree structure and to rigging equipment during planned rigging operations 2.4 Design rigging system to allow for load, impact of force and structural integrity of tree 2.5 Consider breaking strength, working load limits and safety factor of equipment in use 2.6 Discuss and confirm rigging system with work team 2.7 Select rigging equipment, inspect for defects, and repair, replace or remove from service damaged components according to workplace safety procedures 2.8 Assemble and configure rigging equipment into selected rigging system and install at anchor point
3. Implement dismantling of trees	3.1 Coordinate and sequence work with work team during operations using communication methods agreed with work team for site environment 3.2 Access tree crown safely according to dismantling strategy

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	and workplace safety procedures 3.3 Select and apply rigging or dismantling techniques in correct sequence to dismantle tree according to determined dismantling strategy 3.4 Plan each cut and install rigging equipment according to rigging system design and manufacturer instructions 3.5 Check rigging assembly is correctly installed and safe to use prior to performing cut 3.6 Accurately apply a selection of cuts to achieve directional felling and controlled rigging and dismantling of the tree crown and trunk 3.7 Perform cuts from a safe and secure work position using industry standard cutting techniques 3.8 Monitor and adjust dismantling process as required to maintain a safe and efficient workflow 3.9 Dismantle tree by sections into drop zone according to industry standards
4. Complete tree removal activities	4.1 Clean, check, maintain and store tools and equipment according to workplace procedures 4.2 Maintain records according to workplace procedures 4.3 Report completion of tree removal to stakeholder

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Writing	Accurately complete organisational documents, including job safety analysis and records, using clear language, grammar and industry terminology
Oral communication	Clearly explain detailed information using language, tone and pace appropriate to work team when discussing rigging systems and communicating during dismantling work

Skill	Description
Numeracy	Interpret numerical information and calculate volume, weight and dimension of tree components when estimating the forces on rigging equipment

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCARB317 Dismantle trees	AHCARB305 Dismantle trees	Prerequisite units removed Element added Performance criteria added, clarified or removed Foundation skills added Assessment requirements updated	Not equivalent
AHCARB317 Dismantle trees	AHCARB310 Perform aerial rigging	Some content is covered in this redesigned unit	Not equivalent
AHCARB317 Dismantle trees	AHCARB311 Tie, dress, set and finish arborist knots	Some content is covered in this redesigned unit	Not equivalent

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 AHCARB317 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 completely dismantled at least 2 trees in close proximity to structures or other assets. For each tree, the individual must have planned, communicated, prepared, conducted and completed each step of the dismantling process in the correct sequence within a timeframe expected by industry.

Each tree must be a minimum of 15 metres in height and have a minimum canopy spread of 10 metres. There must be a drop zone of no more than 4 square metres available with no access within the remaining drip line of the tree representing structures or other assets to be protected.

There must also be evidence that for each tree the individual has:

- controlled the process from start to finish
- devised a plan, communicated the plan and executed the plan
- selected and implemented an appropriate rigging strategy and sequence including:
 - balancing and lifting of lateral branches
 - negative rigging of timber and heads
- dismantled the tree safely and without damage to assets including:
 - selected appropriate tree components and attached rope correctly
 - made accurate and appropriate cuts from safe working positions
 - maintained constant communication with work team

There must also be evidence that the individual has:

- identified workplace health, safety and environmental hazard and risks and implemented controls for the site, including:
 - conducted and completed a job safety analysis (JSA) or safe work method statement (SWMS)
 - prepared and used personal protective equipment
 - protected site and environmental assets
 - controlled vehicular and foot traffic, including erected signage, barriers, and warning devices

- identified above and below ground services
- identified site and tree hazards and risks, and adjusted work method or implemented control measures
- assessed size, characteristics and defects of tree and determined dismantling strategy
- confirmed access to emergency response resources and procedures
- selected, prepared, checked and used tools and equipment for rigging and dismantling work, including:
 - identified working load limits of equipment components
 - configured compatible equipment components into appropriate rigging systems
 - identified force that will be applied to components in configured system during planned rigging operations
 - estimated mass of load and ensured force applied during rigging operations did not exceed working load limit of equipment
 - adjusted rigging systems as required to limit force applied to rigging system and tree structure
 - cleaned, inspected, maintained and stored tools and equipment according to workplace procedures
- installed rigging equipment to industry standards including selected and tied the following knots:
 - bowline
 - bowline on a bight
 - clove hitch and two half hitches
 - cows hitch
 - Flemish bend
 - girth hitch
 - half hitch pre knot
 - marlinspike hitch
 - round turn and two half hitches
 - rolling hitch
 - running bowline
 - sheet bend
 - slippery sheet bend
 - timber hitch
 - twin bowline bend
 - zeppelin bend
- used at least one of the following methods to safely access the tree according to dismantling method and strategy:
 - climbing technique
 - elevated work platform (EWP)
- dismantled trees using rigging techniques to ensure no damage to assets, using all of the following methods:

- cut and drop into designated drop zone
- cut and lower using rigging and devices
- step cut, hold and throw
- directional felling techniques
- tip lowering, butt lowering, lifting and balancing
- negative rigging techniques for leaders and vertical timber
- the use of multiple anchor points
- floating anchor rigging (simple floating anchor or highline)
- running anchor rigging ('cradle' rigging or speed line)
- made accurate cuts according to industry standards, including:
 - making cuts from a safe and secure work position
 - selecting appropriate cuts for the desired outcome
 - accurately cutting scarfs, step cuts and back cuts.

All tree dismantling work 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:

- anatomy and physiology of tree species and tree removal strategies
- weather conditions and impact on planning and dismantling procedures, including the effect of wind direction and speed
- site and tree hazards that might be encountered, including:
 - identification and evaluation of structural defects in trees
 - above and below ground services and effect on tree removal procedures
- selection of tree removal methods for trees in close proximity to structures and other assets
- methods for accessing trees for dismantling, including:
 - climbing techniques
 - elevated work platform (EWP) for tree removal
- handling and using ropes for rigging and dismantling trees, including:
 - selecting, tying, dressing, setting and finishing arborist knots for rigging and dismantling trees
- common problems and hazards with rigging and their potential consequences and solutions
- dismantling techniques, including:
 - cut and drop
 - cut and lower
 - step cuts
 - directional felling

- rigging techniques, including:
 - butt lowering, tip lowering and balancing
 - negative rigging techniques for leaders and trunk sections
 - floating anchor techniques (highlines and floating anchors)
 - running anchor techniques (cradle rigging and speed lines)
 - applying friction at the point of cut
- rigging equipment selection configuration and use for tree dismantling work, including:
 - friction devices
 - pulleys, blocks, connectors and other hardware
 - dead-eye slings, loopie slings and whoopie slings
 - ropes for rigging and dismantling (tag or pulling lines)
 - configuration of equipment into rigging systems
 - impact of force, breaking strength, safety factors and cycles to failure
 - safe working limits on rigging and lowering equipment
- calculation and estimation of tree dimensions and forces in rigging, including:
 - density of tree sections
 - methods of estimating mass of tree sections
 - estimation of force magnitude and direction applied during rigging operations
 - tree structural limitations and defects and impact on rigging and dismantling operations
 - ensuring force applied does not exceed working load limit of equipment components
 - mass dampening effect of rigging systems
- methods of minimising environmental impact
- preferred industry practices (as outlined in the Companion Volume) relating to dismantling of trees
- legislation, regulations and local government laws governing tree removal, including:
 - permits and approvals
 - stakeholder notifications
- site safety controls, including:
 - first aid and rescue personnel
 - equipment and procedures applicable to tree work
 - barriers and traffic control
 - signage and warning devices
 - responsibility for protecting property and assets in work areas and methods to prevent damage
- considerations in developing a tree dismantling process, including:
 - drop zones
 - lowering zones
 - locating tools and equipment
- communication requirements for tree dismantling work, including:

- communicating with clients, residents and authorities
- communicating with team members
- coordinating and scheduling work teams
- effective communication strategies during tree removal work, including the impact of:
 - noise
 - environmental conditions
 - communications resources
 - visibility
- tools, equipment and resources required for dismantling trees, including:
 - safe use and operation
 - care and maintenance
 - cleaning and storing
- inspecting equipment for signs of defects, including:
 - defective ropes and equipment
 - legal responsibility for maintaining equipment
 - tagging, replacing and reporting defective equipment
- workplace record keeping and reporting procedures.

Assessment Conditions

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

- physical conditions:
 - the two trees to be dismantled as stipulated in the performance evidence requirements
- resources, equipment and materials:
 - rigging equipment
 - height access equipment (climbing equipment or EWP)
 - personal protective equipment
 - chainsaws
 - first aid and emergency response equipment
 - traffic management kit and signage
- specifications:
 - workplace procedures and instructions related to dismantling trees
 - legislation, regulations, codes of practice and preferred industry practices (as outlined in the Companion Volume) relating to dismantling work
- relationships:
 - work team.

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.

Links

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