



Australian Government

AHCARB307 Use advanced climbing techniques

Release: 1

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Modification History

Release	TP Version	Comment
1	AHCv1.0	Initial release

Application

This unit of competency describes the skills and knowledge required to climb trees with ropes, harnesses and specialist equipment using advanced techniques for the purpose of mobility around the required sections of trees for work positioning.

This unit applies to individuals who have a range of cognitive, technical and communication skills to select and apply a specialised range of methods, ropes, equipment and information to complete routine activities and provide and transmit solutions to predictable and sometimes unpredictable problems. Discretion and judgement is required. The work requires the application of extensive arboricultural knowledge. Work is implemented with low risk work procedures and to comply with Safe Work Method Statement documentation.

Licensing, legislative, regulatory, or certification requirements apply to this unit in some states and territories at the time of publication, and may differ according to jurisdiction. Specific determination should be sought through the relevant State or Territory. Works involving this unit of competency may be subject to local tree protection and preservation laws, and the relevant content of applicable Australian Standards.

Pre-requisite Unit

AHCARB312 Use standard climbing techniques to access trees*

AHCARB311 Tie, dress, set and finish arborist knots

Unit Sector

Arboriculture (ARB)

Elements and Performance Criteria

Element	Performance criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Prepare site and inspect equipment	1.1 Determine appropriate method for accessing tree – climbing or using an elevated work platform (EWP) – through discussion with

Element	Performance criteria
	work team 1.2 Determine location of above-and-below-ground services 1.3 Undertake a site-specific risk assessment by identifying work health and safety hazards and assessing risk 1.4 Confirm first aid and rescue personnel, equipment and procedures 1.5 Ensure work team member present, capable, willing and equipped to assist or perform aerial rescue operations 1.6 Prepare and carry out pre-operational and safety checks, on ropes, harnesses, tools and equipment 1.7 Select and use personal protective equipment 1.8 Record and implement work health, safety, site, environmental and traffic control measures
2. Select climbing equipment	2.1 Select harness and appropriate equipment for climbing 2.2 Inspect tree to determine low risk access route through discussion with work team and seek feedback 2.3 Estimate tree height and load in relation to safe working limits of ropes and equipment 2.4 Determine the hold, release and grip attributes of rope 2.5 Select and use static and dynamic rope as required 2.6 Select and use triple locking carabiners 2.7 Determine limits, relative advantages and disadvantages of friction hitches
3. Prepare to access tree	3.1 Tie, dress, set and finish climbing knots and hitches 3.2 Communicate with work team during operations using voice, hand and whistle signals 3.3 Maintain awareness of power line safe approach distances and vegetation clearances 3.4 Select low risk anchor points in accordance with strength, suitability requirements and branch weight
4. Prepare climbing spurs and gaffs for dismantling operations	4.1 Prepare climbing spurs and gaffs for dismantling operations 4.2 Check all components of climbing spurs for defects and wear 4.3 Check gaff tip profile for correct dimensions using gaff gauge 4.4 Sharpen gaff tip cutting edge with file at defined angle using gaff gauge 4.5 Adjust climbing spurs to provide correct operator fit 4.6 Access and perform dismantling work using climbing spurs 4.7 Maintain separation of spurs 4.8 Maintain clearance distance between spurs and ropes
5. Access and ascend tree	5.1 Access and ascend tree using low risk access route with harness

Element	Performance criteria
	and lanyard 5.2 Ascend using single rope, double rope and selected friction hitch as required 5.3 Ascend using uni-ascenders, foot and hand ascenders, and other ascension devices as required 5.4 Use micrograbs, grigris and micro-pulleys as required for mobility and work positioning 5.5 Demonstrate ability to carry out change-overs as required 5.6 Set up redirects and belays using slings and anchors as required 5.7 Select multiple lines to climb trees and tree parts as required 5.8 Select multiple lines to perform tree operations as required
6. Descend from tree	6.1 Descend tree in a controlled manner 6.2 Remove all access equipment in a controlled manner 6.3 Check, clean and store access equipment 6.4 Clean and store personal protective equipment

Foundation Skills

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

Range of Conditions

Unit Mapping Information

This unit is not equivalent to AHCARB307A Undertake complex tree climbing.

Links

Companion Volume implementation guides are found in VETNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCARB307 Use advanced climbing techniques

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Performance Evidence

The candidate must be observed ascending and descending trees using advanced tree climbing practices.

The candidate must be assessed on their ability to integrate and apply the performance requirements of this unit in a workplace setting. Performance must be demonstrated consistently over time and in a suitable range of contexts. The candidate must provide evidence for and demonstrate:

- appropriate method for accessing tree – climbing or using an EWP – through discussion with work team
- determining location of above-and-below-ground services
- undertaking a site-specific risk assessment by identifying work health and safety hazards and assessing risk
- confirming first aid and rescue personnel, equipment and procedures
- ensuring work team member present, capable, willing and equipped to assist or perform aerial rescue operations
- preparing and carrying out pre-operational and safety checks, on ropes, harnesses, tools and equipment
- selecting and using personal protective equipment and safety equipment
- recording and implementing work health, safety, site, environmental and traffic control measures
- selecting harness and appropriate equipment for climbing
- inspecting tree to determine low risk access route through discussion with work team and seek feedback
- estimating tree height and load in relation to safe working limits of ropes and equipment
- determining the hold, release and grip attributes of rope
- selecting and using static and dynamic rope as required
- selecting and using triple locking carabiners
- determine limits, relative advantages and disadvantages of friction hitches including: Tautline, Blake's, Prussik, Klemheist, Valdetain, French Prussik and specialised variations
- tying, dressing, setting and finishing climbing knots and hitches

- communicating with work team during operations using voice, hand and whistle signals
- maintaining awareness of power line safe approach distances and vegetation clearances
- selecting low risk anchor points in accordance with strength, suitability requirements and branch weight
- accessing and ascending tree using low risk access route with harness and lanyard
- ascending using single rope, double rope and selected friction hitch as required
- ascending using uni-ascenders and foot ascenders as required
- using micrograbs, grigris and micro-pulleys as required for access and tree operations
- demonstrating ability to carry out change-overs
- setting up redirects and belays using slings and anchors
- selecting multiple lines to access trees and tree parts
- selecting multiple lines to perform tree operations
- descending tree in a controlled manner
- removing all access equipment in a controlled manner
- cleaning and storing climbing equipment
- cleaning and storing personal protective equipment
- use of industry standard-terminology to describe climbing and the work environment.

Knowledge Evidence

The candidate must demonstrate knowledge of:

- appropriate method of tree access
- selection of climbing or EWP access
- determination of location of above-and-below-ground services
- site-specific risk assessment
- first aid personnel, equipment and procedures
- rescue personnel, equipment and procedures
- work health, safety, site, environmental and traffic control measures
- pre-operational and safety checks, on ropes, harnesses, tools and equipment
- personal protective equipment
- types of climbing ropes
- dynamic and static ropes
- rope characteristics
- uses of climbing ropes
- safe working limits of ropes
- safe working limits of equipment
- defects in ropes, tools and equipment
- climbing harnesses and lanyards
- climbing equipment
- triple action carabiners
- friction hitches including:

- Tautline, Blake's, Prussik, Klemheist, Valdetain, French Prussik and specialised variations
- arborist knots
- tying knots
- dressing knots
- setting knots
- checking knots
- finishing knots
- industry voice, hand and whistle signals
- low risk access routes
- estimation of tree height
- estimation of load
- safe working limits
- tree access techniques and equipment
- strength and suitability requirements
- single and double rope techniques
- uni-ascenders and foot ascenders
- micrograbs, grigris, micro-pulleys
- use of climbing spikes of various lengths
- change-overs
- redirects and belays using slings and anchors
- use of multiple lines to access trees and tree parts
- advanced climbing techniques
- low risk anchor points
- maintenance of awareness of power lines
- power line safe approach distances and vegetation clearances
- controlled descent operations
- controlled removal of access equipment
- cleaning of equipment
- storage of equipment.

Assessment Conditions

It is an industry requirement that delivery of training and assessment in this unit provides for the explicit conditions of work team capability for aerial rescue operations. It is an industry requirement for competency in this unit that assessment must include a log record of two hundred (200) hours of advanced climbing.

Assessment must be demonstrated consistently over time in a suitable range of contexts and have a productivity-based outcome. No single assessment event or report is sufficient to achieve competency in this unit. Assessment may be conducted in a simulated or real work environment, however determination of competency requires the application of work practices under work conditions.

The mandatory equipment and materials used to gather evidence for assessment include:

- equipment:
 - single rope technique (SRT) climbing kit
 - harness
 - chaps
 - climbing friction hitches
 - high decibel whistle
 - personal protective equipment (PPE)
 - first aid and emergency kit
 - rescue kit
 - traffic management kit
 - trees
- materials:
 - climbing techniques form - advanced
 - climbing log record – advanced
 - tree inspection form
 - hazard identification and risk control form
 - equipment and PPE check form
 - knot identification form
 - work communications form
 - rescue form - aerial

Assessors must satisfy current standards for RTOs in the assessment of arboriculture units of competency.

Assessment must be conducted only by persons who 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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