



Australian Government

Department of Education, Employment and Workplace Relations

FPIHAR4201B Apply tree jacking techniques

Release: 1

FPIHAR4201B Apply tree jacking techniques

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit describes the outcomes required to apply tree jacking techniques in the process of felling trees 180° away from their natural direction of fall using purpose built tree jacks

General workplace legislative and regulatory requirements apply to this unit; however there are no specific licensing or certification requirements at the time of publication

This unit replaces FPIHAR4201A Apply tree jacking techniques

Application of the Unit

Application of the unit

The unit involves applying tree jacking techniques in a forest or farm forest setting

The skills and knowledge required for competent workplace performance are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units

Employability Skills Information

Employability skills This unit contains employability skills

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for <i>tree jacking</i>	1.1. Applicable <i>Occupational Health and Safety</i> (OHS), <i>environmental</i> , <i>legislative</i> and <i>organisational requirements</i> relevant to applying tree jacking techniques are identified and followed 1.2. <i>Work plan</i> is reviewed and checked with <i>appropriate personnel</i> 1.3. Type and quantity of <i>trees</i> to be tree jacked are identified and assessed for safe working conditions and <i>environmental protection measures</i> 1.4. <i>Equipment</i> is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations 1.5. Tree jacking activities are planned in line with site procedures 1.6. <i>Communication</i> with others is established and maintained in line with OHS requirements
2. Assess and plan tree jacking	2.1. <i>Environmental conditions</i> are assessed and the outcomes are used as the basis to plan the felling of each tree 2.2. Movement and whereabouts of other personnel is monitored and work modified to be in line with OHS regulations 2.3. Tree, location and <i>stability</i> are assessed for conditions likely to affect safety of tree jacking activities 2.4. Tree is visually assessed for <i>defects</i> , <i>grade</i> and recovery status 2.5. Growth around tree and appropriate escape route are selected and cleared either manually or mechanically 2.6. <i>Fall direction</i> and allowable degree of error are assessed, considering <i>hang ups</i> , damage, <i>extraction</i> constraints and available open space 2.7. <i>Cutting sequence</i> is planned to control direction of the fall and minimise damage to the tree and surrounding environment and communicated to other personnel 2.8. Trees too dangerous to be felled safely are marked and referred to appropriate personnel
3. Tree jack trees	3.1. <i>Pre start-up checks</i> are carried out on equipment in line with site requirements

ELEMENT**PERFORMANCE CRITERIA**

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| 4. | Conduct operator maintenance | <p>3.2. Leaders are removed and cleared in line with the tree jacking plan</p> <p>3.3. Unexpected characteristics of a tree are diagnosed and planning is reviewed</p> <p>3.4. Jacking slots are made to provide for placement of tree jacks in line with planned falling direction</p> <p>3.5. Cutting technique is adjusted and tree jacks are used to control movement and direction of tree being felled</p> <p>3.6. Falling is completed once initiated and planned safe exit route used in line with OHS requirements</p> <p>3.7. Movement of the tree on the ground is monitored and trees that hang up are assessed and cleared in line with site requirements</p> <p>3.8. Tree jacking process and equipment faults are recorded and reported to the appropriate personnel</p> <p>4.1. Equipment lock-out procedures are followed in line with OHS legislation and site procedures</p> <p>4.2. Chain is checked for blunt or damaged condition</p> <p>4.3. Chain and other components are removed, sharpened, maintained, adjusted and replaced in line with manufacturer's recommendations</p> <p>4.4. Tree jacks are checked for operation and serviced</p> <p>4.5. Chainsaw set-up is assessed and adjusted to suit cutting conditions</p> <p>4.6. Chainsaw is kept in operational condition and checked to ensure it meets relevant standards prior to use</p> |
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Required Skills and Knowledge**REQUIRED SKILLS AND KNOWLEDGE**

This describes the essential skills and knowledge and their level required for this unit

Required skills

- Technical skills sufficient to use and maintain relevant tools, machinery and equipment; advanced tree felling; efficiently and safely apply tree jacking techniques; accurately assess chainsaw chain and tree jacks condition
- Communication skills and interpersonal techniques sufficient to interact

REQUIRED SKILLS AND KNOWLEDGE

appropriately with colleagues and others in the workplace

- Literacy skills sufficient to accurately record and maintain information relating to tree jacking
- Numeracy skills sufficient to estimate and measure and calculate time required to complete a task
- Problem solving skills sufficient to identify problems and equipment faults and demonstrate appropriate response procedures

Required knowledge

- Applicable Commonwealth, State or Territory legislation, regulations, standards, codes of practice and established safe practices relevant to the full range of processes for applying tree jacking techniques
- Environmental protection requirements, including the safe disposal of waste material, the cleaning of plant, tools and equipment and the recycling and re-use of timber with defects
- Characteristics of trees and timber defects
- Organisational and site standards, requirements, policies and procedures for applying tree jacking techniques
- Tree jacking methods
- Chainsaw operation, cutting sequences and safety
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment and procedures for their use, operation and maintenance
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace records and information

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can safely and efficiently apply tree jacking techniques within organisational requirements

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements of this unit and include demonstration of:

- following applicable Commonwealth, State or Territory legislative and regulatory requirements and codes of practice relevant to the application of tree jacking techniques
- following organisational policies and procedures relevant to apply tree jacking techniques
- applying tree jacking techniques in line with the work order and within prescribed organisational tolerances
- conducting operator maintenance on a chainsaw
- Competency is to be assessed in the workplace or realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of required knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to follow relevant regulatory or Australian Standards requirements
- The following resources should be made available:
 - workplace location or simulated workplace
 - materials and equipment relevant to undertaking work applicable to this unit
 - specifications and work instructions
- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and accuracy of performance (over time and in a range of workplace relevant contexts) together with

Context of and specific resources for assessment

EVIDENCE GUIDE

application of required knowledge

- Assessment must be by direct observation of tasks, with questioning on required knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access and correctly interpret and apply the required knowledge
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances
- Assessment may be in conjunction with assessment of other units of competency
- The assessment environment should not disadvantage the candidate
- Assessment practices should take into account any relevant language or cultural issues related to Aboriginality, gender or language backgrounds other than English
- Where the participant has a disability, reasonable adjustment may be applied during assessment
- Language and literacy demands of the assessment task should not be higher than those of the work role

Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Italicised** wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Tree jacked

is the process of felling trees 180° away from their natural lean using purpose built tree jacks, held in position by boring holes into the solid wood of the tree and securing the jacks to these

RANGE STATEMENT

OHS requirements:

are to be in line with applicable Commonwealth, State or Territory legislation and regulations, and organisational safety policies and procedures, and may include:

- personal protective equipment and clothing
- safety equipment
- first aid equipment
- fire fighting equipment
- hazard and risk control
- fatigue management
- elimination of hazardous materials and substances
- safe forest practices including required actions relating to forest fire
- manual handling including shifting, lifting and carrying

Environmental requirements may include:

- legislation
- organisational policies and procedures
- workplace practices

Legislative requirements:

are to be in line with applicable Commonwealth, State or Territory legislation, regulations, certification requirements and codes of practice and may include:

- award and enterprise agreements
- industrial relations
- Australian Standards
- confidentiality and privacy
- OHS
- the environment
- equal opportunity
- anti-discrimination
- relevant industry codes of practice
- duty of care

Organisational requirements may include:

- legal
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement

RANGE STATEMENT

processes and standards

- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use and maintenance and storage requirements
- environmental management requirements (waste disposal, recycling and re-use guidelines)

Work plan is to include:

- instructions for tree jacking for the work site
- and may include:

- type
- size
- length
- quantity
- grade
- instructions for the environmental monitoring of work and procedures
- environmental care requirements relevant to the work

Appropriate personnel may include:

- supervisors
- offsider/jack operator
- suppliers
- clients
- colleagues
- managers

Trees

are those in positions where conventional cutting techniques will not facilitate desired fall direction

Environmental protection measures may include:

- ground growth
- canopy
- general forest lean
- wind speed and direction
- fallen trees
- density of trees
- ground slope
- soil and water protection
- ground hazards
- obstacles
- contingencies for modifying operations during wet or other adverse weather conditions

RANGE STATEMENT

Equipment may include:

- tree jacks
- chainsaws
- specific safety attire
- maintenance tools and equipment

and is to include:

- procedures for chainsaw lock-out such as protecting operators and co-workers from accidental injury by isolating the machine

Communication may include:

- verbal and non-verbal language
- hand or other agreed signals
- eye contact with other operators or personnel
- active listening
- questioning to clarify and confirm understanding
- use of electronic communication devices

Environmental conditions may include:

- ground growth
- ground slope
- gullies
- water courses
- seed trees
- habitat trees
- ground hazards
- obstacles

Stability

is the physical stability of the tree in-situ, that it is safe to fell and not likely to contain defect

Defects may include:

- shakes
- insect defects
- knots
- resin pockets

Grade

is evaluation of the tree for defects, quality and size of log return

Fall direction

is 180° away from natural lean

Hang ups

are trees which become entangled or snagged with other objects, usually other standing trees and do not fall completely to the ground

Extraction

is the method of removing the log from the work site with mechanical equipment and cables, considering site conditions and specific log

RANGE STATEMENT

	location
Cutting sequence	is the best direction or angle for making cuts to facilitate achieving the fall direction
Pre start-up checks	are conducted to ensure: <ul style="list-style-type: none"> • equipment has been set-up correctly • the systems are performing accurately and operating to optimum performance
Leaders	are new tree growth from the base or near the base of the tree
Records and reports may relate to:	<ul style="list-style-type: none"> • tree type, size, length, diameter, inspection, grading and labelling outcomes, storage locations, quality outcomes, hazards, incidents or equipment malfunctions and may be: <ul style="list-style-type: none"> • manual • using a computer-based system or other appropriate organisational communication system
Chain	is the fast moving component surrounding the chainsaw blade containing many linked teeth

Unit Sector(s)

Unit sector No sector assigned

Co-requisite units

Co-requisite units

Competency field

Competency field Harvesting and Haulage