



Australian Government

Department of Education, Employment and Workplace Relations

FPIHAR3213B Conduct mechanically assisted tree falling operations

Release: 1

FPIHAR3213B Conduct mechanically assisted tree falling operations

Modification History

Not Applicable

Unit Descriptor

Unit descriptor This unit describes the outcomes required to use machinery, winches and cables to push or pull trees away from their natural direction of fall

Compliance with licensing, legislative, regulatory or certification requirements may be required in various jurisdictions

Application of the Unit

Application of the unit The unit involves conducting mechanically assisted tree falling operations in a forest or farm forest environment

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 pushing or pulling</i>	1.1. Applicable Occupational Health and Safety (OHS), environmental, legislative and organisational requirements relevant to conducting mechanically assisted tree falling operations are identified and followed 1.2. Work plan is reviewed and checked with appropriate personnel 1.3. Type and quantity of trees to be pushed or pulled are identified and assessed for safe working conditions 1.4. Equipment is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations 1.5. Tree pushing or pulling activities are planned in line with site procedures, taking into consideration environmental requirements where it is safe to do so 1.6. Communication with others is established and maintained in line with OHS requirements
2. Assess and plan tree pushing or pulling	2.1. Environmental conditions are assessed and used 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 stability are assessed for conditions likely to affect safety of tree pushing or pulling activities 2.4. Tree is visually assessed for defects, grade and recovery status 2.5. Growth around tree and escape route is selected and cleared either manually or mechanically 2.6. Fall direction and allowable degree of error are assessed, considering hang ups, damage and extraction constraints 2.7. Cutting sequence 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

ELEMENT	PERFORMANCE CRITERIA
3. Push or pull trees	3.1. Pre start-up checks are carried out on equipment in line with site requirements 3.2. Leaders are removed and cleared in line with the tree pushing or pulling plan 3.3. Unexpected characteristics of a tree are diagnosed and planning is reviewed 3.4. Winches or cables or machinery are secured and tensioned and scarf cut made in line with planned falling direction and OHS requirements 3.5. Appropriate cuts are made to assist the fall angle of the tree and should be placed below the scarf cut 3.6. Falling is completed once initiated and planned escape route used once the tree begins to fall 3.7. Movement of the tree on the ground is monitored until stable and trees which hang up are flagged and cleared immediately 3.8. Tree pushing or pulling process and equipment faults are recorded and reported to the appropriate personnel
4. Conduct operator maintenance	4.1. Equipment lock-out procedures are followed in line with OHS legislation and site procedures 4.2. Chain is checked for blunt or damaged condition 4.3. Chain and other components are removed, sharpened, maintained, adjusted and replaced in line with manufacturer's recommendations 4.4. Tree pushing or pulling equipment is checked for operation and serviced 4.5. Chainsaw set-up is assessed and adjusted to suit cutting conditions 4.6. Chainsaw is kept in operational condition and checked to ensure it meets relevant standards prior to use

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

REQUIRED SKILLS AND KNOWLEDGE

- Technical skills sufficient to use and maintain relevant tools, machinery and equipment; efficiently and safely apply tree pushing or pulling techniques
- Communication skills and interpersonal techniques sufficient to interact appropriately with colleagues and others in the workplace
- Literacy skills sufficient to accurately record and maintain information relating to tree pushing or pulling
- Numeracy skills sufficient to estimate, 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 conducting mechanically assisted tree falling operations
- Environmental protection requirements, including the safe disposal of waste material and the cleaning of plant, tools and equipment
- Characteristics of trees and timber defects
- Organisational and site standards, requirements, policies and procedures for conducting mechanically assisted tree falling operations
- Tree pushing or pulling methods
- Chainsaw operation, cutting sequences and safety
- Chainsaw chain and tree pushing or pulling equipment condition assessment
- Established communication channels and protocols
- Problem identification and resolution strategies and common fault finding techniques
- Types of tools and equipment and procedures for their safe 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 pushing or pulling techniques mechanically 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 conducting mechanically assisted tree falling operations
- following organisational policies and procedures relevant to conducting mechanically assisted tree falling operations
- applying tree pushing or pulling techniques in line with the work plan 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

Context of and specific resources for assessment

Method of assessment

- Assessment must satisfy the endorsed Assessment Guidelines of the FPI11 Training Package
- Assessment methods must confirm consistency and

EVIDENCE GUIDE

accuracy of performance (over time and in a range of workplace relevant contexts) together with 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. Bold 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.

Trees

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

RANGE STATEMENT

Pushed or pulled

is the process of felling trees away from their natural direction of fall using machinery, winches or cables by pushing or pulling with winches or cables held in position by wrapping the cables around the tree to be cut

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
- erection of signs
- 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

- legal

RANGE STATEMENT

may include:

- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- quality assurance
- procedural manuals
- quality and continuous improvement 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 pushing or pulling 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
- suppliers
- clients
- colleagues
- managers

Equipment may include:

- machinery
- excavators
- winches
- cables
- chainsaws
- specific safety attire
- maintenance tools and equipment

and is to include:

RANGE STATEMENT

	• 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 wet or dry rot
Defects may include:	• shakes • insect defects • knots • resin pockets
Grade is to include:	• evaluation of the tree for defects • quality and size of log return
Fall direction	is the natural direction the tree will fall considering its degree of natural lean or its ground position on a slope or in a gully
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 worksite with mechanical equipment and cables, considering site conditions and specific log location
Cutting sequence	is the best direction or angle for making cuts to facilitate achieving the required fall direction

RANGE STATEMENT

Pre start-up checks	are conducted to ensure: • equipment has been set-up correctly • the systems are performing accurately and operating to optimum performance
Leaders are to include:	• new tree growth from the base or near the base of the tree
Winches or cables	are the equipment used to assist the tree falling in an opposing direction to its natural fall by wrapping the cables around the tree and another object, combined by the winch, pressure is brought on the tree to fall in an opposing direction
Machinery may include:	• excavators
Records and reports may include:	• tree type • size • length • diameter • inspection • grading and labelling outcomes • storage locations • quality outcomes • hazards • incidents • equipment malfunctions and may be: • manual • using a computer-based system or another 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
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Co-requisite units

Co-requisite units

Competency field

Competency field Harvesting and Haulage