



Australian Government

Department of Education, Employment and Workplace Relations

FPIHAR3221 Harvest trees manually (advanced)

Release: 1

FPIHAR3221 Harvest trees manually (advanced)

Modification History

Version	Detail
1	Unit replaces FPIHAR3212A Harvest trees manually (advanced)

Unit Descriptor

This unit specifies the outcomes required to assess, plan and safely carry out advanced tree harvesting operations using a chainsaw.

Application of the Unit

This unit involves harvesting trees in forest and forest product operations of all sizes. It applies to a forest environment and involves application of skills and knowledge at a tradesperson level.

These skills and knowledge are to be used within the scope of the person's job and authority

Licensing/Regulatory Information

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

Pre-Requisites

Not applicable

Employability Skills Information

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 felling	<p>1.1 Identify and comply with applicable <i>occupational health and safety</i> (OHS), environmental, <i>legislative</i> and <i>organisational requirements</i> relevant to harvesting <i>trees</i></p> <p>1.2 Identify and adhere to site <i>environmental protection measures</i> and harvest plan according to relevant legislation and regulations</p> <p>1.3 Review and check <i>job requirements</i> with <i>appropriate personnel</i></p> <p>1.4 Select <i>tools and equipment</i> appropriate to work requirements and check for operational effectiveness according to manufacturer recommendations</p> <p>1.5 Sharpen and adjust chainsaw or change components according to manufacturer recommendations</p> <p>1.6 Assess tree and determine felling requirements</p> <p>1.7 Identify and control potential and existing risks and <i>hazards</i> in the work area</p> <p>1.8 Identify trees to be felled and <i>retained</i> and establish general falling direction</p> <p>1.9 Identify <i>log extraction method</i> and requirements</p> <p>1.10 Determine <i>requirements for product quality</i></p> <p>1.1 Establish and maintain <i>communication</i> with others according to OHS requirements</p>
2. Assess conditions and surroundings	<p>2.1 Identify and comply with site environmental concerns according to relevant federal, state or territory legislation and local regulations</p> <p>2.2 Identify and assess <i>environmental conditions</i> according to <i>harvesting plan</i></p> <p>2.3 Maintain awareness of environmental conditions and other personnel activity in the work area and modify felling activity where required</p> <p>2.4 Assess general factors affecting felling requirements and detect and control specific forest or site risks and hazards</p>
3. Assess tree and plan felling	<p>3.1 Locate and visually assess tree for felling characteristics</p> <p>3.2 Assess and check required falling direction and possible deviation</p> <p>3.3 Plan sequence of cuts to fell tree according to standard felling procedures and log quality requirements</p>

ELEMENT	PERFORMANCE CRITERIA
	3.4 Assess <i>limitations</i> of own skills in safely felling trees, identify <i>trees considered outside own skill level</i> and seek assistance from appropriate personnel where required
	3.5 Note and monitor location and activity of other personnel in the work area
4. Fell trees of any size, species and condition	4.1 Fell individual trees using planned <i>cutting techniques</i> according to site conditions, extraction method and at a safe distance from other personnel in the work area
	4.2 Adjust cutting technique in response to movement and condition of tree
	4.3 Use planned escape route when tree starts to fall and monitor the fall and movement of tree on ground until determined stable
	4.4 Delay movement back into the felling area until all tree material, including from adjacent tree crowns, has fallen, and identify any dangerous tree branches that hang-up
	4.5 Fell trees to meet production levels, log extraction methods and site requirements
	4.6 Identify procedures for removal of trees that are hung-up
5. Maintain equipment	5.1 Detect, rectify and report blunt or damaged saw chain according to workplace procedures
	5.2 Monitor chainsaw for operational effectiveness and record and report faults, malfunctions and problems according to workplace procedures

Required Skills and Knowledge

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

Required skills:

- Technical skills to:
 - use and maintain relevant tools and equipment
 - safely operate and maintain a chainsaw
 - assess, plan and carry out tree-felling operations appropriate to site conditions
- Communication skills to:
 - use appropriate communication and interpersonal techniques and methods with colleagues and others
 - use hand signals with other operators to maintain effective and safe tree felling
- Literacy skills to:
 - locate and report information
 - interpret, apply and convey information in written, diagrammatic and/or verbal form
- Numeracy skills to:
 - estimate tree height
 - calculate product mass and determine tree fall zone
 - measure tree length and diameter
- Problem-solving skills to:
 - review and identify work requirements
 - recognise own limitations in conditions and trees for felling
 - identify problems and equipment faults and demonstrate appropriate response procedures
 - apply safe work practices, including using personal protective equipment (PPE) and controlling hazards
 - comply with legislation, regulations, standards, codes of practice and established safe practices and procedures for felling trees manually
- Planning and organising skills to work to site requirements and extraction methods

Required knowledge:

- Basic knowledge of applicable federal, state or territory legislation, regulations, standards and codes of practice relevant to the full range of processes for felling trees manually
- Environmental protection requirements, including the safe disposal of waste material
- Organisational and site standards, requirements, policies and procedures for harvesting trees manually
- Types of tools and equipment for harvesting trees manually, and the procedures for their safe use, operation and maintenance
- Problem identification and resolution strategies and common fault-finding

techniques

- Established communication channels and protocols
- Procedures for identifying and evaluating structural defects in trees
- Types and purposes of a range of cuts to fell trees
- Operational principles and limitations of a chainsaw
- Procedures for recording and reporting workplace information
- Chainsaw product specifications
- Site production requirements
- Fire protocols

Evidence Guide

The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Overview of assessment

A person who demonstrates competency in this unit must be able to provide evidence that they can assess, plan and safely and efficiently operate chainsaw equipment to manually harvest trees at an advanced level in a forest environment

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:

- compliance with applicable federal, state or territory legislative and regulatory requirements and codes of practice including OHS, environmental and organisational policies and procedures relevant to harvesting trees at an advanced level
- compliance with applicable licensing or certification requirements relevant to harvesting trees at an advanced level
- effective communication and working safely with others in the work area
- assessing, planning and safely felling trees without damage to personnel, equipment and surrounding environment
- planning felling sequence and preparing surroundings for harvesting operations
- preparing, operating and maintaining chainsaw and other ancillary equipment
- appropriate extraction methods
- applying specifications as outlined in harvesting plan

Context of and specific resources for assessment

- Competency is to be assessed in the workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than confirmatory questions, will usually be conducted in an off-site context
- Assessment is to comply with relevant regulatory requirements and Australian standards
- The following resources should be made available:

- workplace location
- materials and equipment relevant to undertaking work applicable to this unit
- work instructions specific to tree felling

Method of assessment

- Assessment methods 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 application of underpinning knowledge
- Assessment must be by direct observation of tasks, with questioning on underpinning knowledge and it must also reinforce the integration of employability skills
- Assessment methods must confirm the ability to access, interpret and apply the essential underpinning knowledge
- 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.

OHS requirements: are to be in accordance 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
- appropriate signage
- elimination of hazardous materials and substances
- safe forest practices including required actions relating to forest fire
- manual handling including shifting, lifting and carrying

Legislative requirements: are to be in accordance 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
- native vegetation
- equal opportunity
- anti-discrimination
- relevant industry codes of practice

- duty of care
- heritage and traditional land owner issues

Organisational requirements may include:

- legal compliance documentation
- 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)

Trees typical to the scope of this unit may include the following characteristics:

- lean and weight distribution which adds significant complexity yet can be assessed and adapted to site requirements
- larger dimensions relative to local forest size distribution
- substantial lean
- damage and/or defect that requires complex felling techniques
- these may include multi legged, hollow butts, culls, stags
- species prone to free splitting and adverse reactions during falling
- a crown that contains dead or broken material, entanglement or malformation and presents a hazardous and difficult situation for assessment, monitoring and safe falling
- single or complex multi stems
- diameter of tree greater than chainsaw bar length
- grown on terrain and slope that can add significant complexity to the operation

Environmental protection measures may include action

- native vegetation

to limit the impact to:

- soil and water
- heritage and archaeological artefacts
- flora and fauna
- geomorphologic features
- landscape
- external site pollution
- recreational opportunities
- regeneration opportunities

Job requirements may include

- information and instructions relevant to tree falling operations including processing location details and trees to be felled and retained
- information may also include general environmental requirements
- site plan and environmental features

Appropriate personnel may include:

- supervisors
- clients
- colleagues
- managers

Tools and equipment may include

- warning signs
- chainsaw and components
- PPE and clothing
- first aid equipment
- maintenance requirements
- support tools

Hazards may include:

- uneven/unstable terrain
- unsafe trees
- fires
- overhead and underground services
- excavations
- traffic
- structures
- hazardous materials
- insects and animals
- other personnel and machinery

Retained trees include:

- those listed as heritage trees such as seed trees, habitat trees and crop trees

Log extraction methods may include:

- skidding
- forwarding
- cable
- shovel logging

Requirements for product quality may include:

- product specifications
- stump shatter
- butt splitting
- log breakage
- stump height

Communication may include:

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

Environmental conditions may relate to:

- ground growth
- canopy
- general forest lean
- ground slope
- ground hazards
- wind speed and direction

Harvesting plan is a formal document that outlines the operational requirements of the worksite which may include:

- extraction plan
- traffic plan
- environmental requirements
- restricted areas
- identified hazards
- harvesting prescription
- product volumes

the harvesting plan document may be named differently

between jurisdictions and/or regions, common terms may include but are not restricted to:

- coupe plan
- forest practices plan
- harvesting or logging plan

Limitations may relate to:

- job role and responsibilities
- own competency level
- industry requirements
- own understanding of risk identification processes
- own interpretation of legislation regulations and procedures
- complying with OHS requirements

Trees considered outside own skill level include:

- trees which contain hazards and are deemed unsafe
- trees where cuts made may lead to loss of control of tree in felling

Cutting Techniques will include:

- scarf-cutting
- back cutting to provide hinge-wood and maintain control of tree

and may include:

- use of wedges to assist in controlling falling direction

Unit Sector(s)

Harvesting and Haulage

Competency field

Competency Field

Harvesting and Haulage