



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **FPIFGM3212 Fall trees manually (intermediate)**

**Release: 1**

## FPIFGM3212 Fall trees manually (intermediate)

### Modification History

Version	Detail
1	Unit replaces FPIFGM3204A Fall trees manually (intermediate)

### Unit Descriptor

This unit describes the outcomes required to assess, plan and safely carry out manual tree-felling operations using a chainsaw in a non-production environment. This unit covers the felling procedures for trees with a level of complexity that requires significant tree assessment and practical felling skills. Persons competent in this unit should be able to effectively fell most trees with the exception of the very large and those that have significant defects and/or characteristics causing excessive complexity.

Techniques for trees with a diameter greater than the bar length would generally be regarded as within the scope of this unit.

### Application of the Unit

This unit involves felling trees in a non-production environment. It applies to a forest, rural and community environment.

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

### Licensing/Regulatory Information

Licensing, legislative, regulatory or certification requirements may apply 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 <b>occupational health and safety</b> (OHS), environmental, <b>legislative</b> and <b>organisational requirements</b> relevant to felling trees</p> <p>1.2 Identify and adhere to site <b>environmental protection measures</b> according to relevant legislation and regulations</p> <p>1.3 Review and check <b>job requirements</b> with <b>appropriate personnel</b> as required</p> <p>1.4 Sharpen and adjust chainsaw or change components according to manufacturer recommendations</p> <p>1.5 Assess tree and determine felling requirements</p> <p>1.6 Identify and control potential and existing risks and <b>hazards</b> in the work area</p> <p>1.7 Identify trees to be retained and felled</p> <p>1.8 Establish and maintain <b>communication</b> with others according to OHS requirements</p>
2. Visually assess site 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 Review terrain and slope to determine if they add complexity to the operation</p> <p>2.3 Maintain awareness of <b>environmental conditions</b> 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 Visually assess tree for felling characteristics</p> <p>3.2 Select <b>tools and equipment</b> appropriate to work requirements and check them for operational effectiveness according to manufacturer recommendations</p> <p>3.3 Identify trees to be felled for size, significant defects and any characteristics causing excessive complexity</p> <p>3.4 Assess and progressively plan tree-felling sequence for individual trees</p> <p>3.5 Assess and check required falling direction and possible deviation</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	3.6 Plan sequence of cuts to fell tree according to standard felling procedures
	3.7 Select suitable escape route
	3.8 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
	3.9 Monitor and exclude location and activity of other personnel on the work site
4. Apply tree-felling techniques	4.1 Select suitable escape route and clear of growth and other obstacles according to environmental care principles and statutory requirements
	4.2 Fell individual trees using planned <i>techniques</i> according to site requirements, at a safe distance from other personnel in the work area
	4.3 Adjust cutting technique in response to movement and condition of tree
	4.4 Use planned escape route when tree starts to fall and monitor the fall and movement of tree on ground until determined stable
	4.5 Identify procedures for removal of trees that are hung-up
	4.6 Detect, rectify and report blunt or damaged saw chain according to workplace procedures
	4.7 Monitor chainsaw for operational effectiveness and record and report faults, malfunctions and problems according to workplace procedures

## Required Skills and Knowledge

### 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 plan work to site requirements

**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 felling trees manually
- Types of tools and equipment for felling 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 and stresses 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

## 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 assess, plan and safely and efficiently operate chainsaw equipment to manually fell trees at the intermediate 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 relevant to felling trees manually at an intermediate level
- compliance with organisational policies and procedures relevant to felling trees manually at an intermediate level
- compliance with applicable licensing and certification requirements
- communicating effectively and working safely with others in the work area
- Identifying and describe key features of structural defects and stresses in trees and the impact on
  - conducting an assessment of a range of intermediate trees, and planning and safely felling trees without damage to personnel, equipment and surrounding environment
  - planning felling sequence and preparing surroundings including escape route
- felling a range of intermediate trees using a range of cuts safely without damage to personnel, equipment and surrounding environment
- preparing, operating and maintaining chainsaw equipment and other felling equipment

### Context of and specific resources for assessment

- Competency is to be assessed in the workplace or a realistically simulated workplace
- Assessment is to occur under standard and authorised work practices, safety requirements and environmental constraints
- Assessment of essential underpinning knowledge, other than



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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 or simulated workplace
  - materials and equipment relevant to undertaking work applicable to this unit
  - specifications and work instructions

### **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 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

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 in the Performance Criteria is detailed below.

- OHS requirements:**
- are to be in accordance with applicable federal, state or territory legislation and regulations, and organisational safety policies and procedures, and may include:
    - PPE and clothing
    - safety equipment
    - first aid equipment
    - firefighting equipment
    - hazard and risk control
    - fatigue management
    - appropriate signage
    - elimination of hazardous materials and substances
    - safe forest practices, including required actions relating to fire
    - techniques for manual handling, including shifting, lifting and carrying
- Legislative requirements:**
- are to be in accordance with applicable federal, state or territory legislation, regulations, certification requirements and codes of practice and may include:
    - award and organisational agreements
    - industrial relations
    - Australian standards
    - confidentiality and privacy
    - OHS
    - the environment
    - native vegetation
    - equal employment opportunity
    - anti-discrimination
    - relevant industry codes of practice
    - duty of care

**Organisational requirements** may include:

- legal compliance documentation
- organisational and site guidelines
- policies and procedures relating to own role and responsibility
- procedural manuals
- quality and continuous improvement processes and standards
- OHS, emergency and evacuation procedures
- ethical standards
- recording and reporting requirements
- equipment use, maintenance and storage requirements
- environmental management requirements, including 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 can be assessed and readily adapted to falling direction with the use of wedges and/or control with hinge-wood
- various dimensions relative to local forest size distribution
- limited visible damage or defect
- species prone to free splitting and adverse reactions during felling
- a crown that contains dead or broken material, entanglement or malformation and is visible for assessment and monitoring
- single or multi-stems
- diameter of tree greater than chainsaw bar length
- grown on terrain and slope that can add complexity to the operation

**Environmental protection measures** may include action to limit the impact to:

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

- Job requirements** may include:
- information and instructions relevant to tree-felling operations, including processing location details and trees to be felled and retained
  - general environmental requirements
  - site plan and environmental features
- Appropriate personnel** may include:
- supervisors
  - clients
  - colleagues
  - managers
- Hazards** may include:
- uneven or unstable terrain
  - unsafe trees
  - fires
  - overhead and underground services
  - excavations
  - traffic
  - structures
  - hazardous materials
  - insects and animals
  - other personnel and machinery
- 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
  - electronic communication devices
- Environmental conditions** may relate to:
- ground growth
  - canopy
  - general tree lean
  - ground slope
  - ground hazards
  - wind speed and direction
- Tools and equipment** may include:
- warning signs
  - chainsaw and components
  - PPE and clothing

- first aid equipment
- maintenance requirements
- support tools

**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 that contain hazards and are deemed unsafe
- trees that are considered to be in the advanced category
- trees where cuts made may lead to loss of control of tree in falling

**Techniques:**

- will include:
  - scarf cutting
  - back cutting to provide hinge-wood and maintain control of tree
- may include:
  - use of wedges to assist in controlling falling direction

**Unit Sector(s)**

Forest Growing and Management

**Competency field**

**Competency field**

Forest Growing and Management