



**Australian Government**

# **FPIHAR3210C Conduct mechanical processor operations**

**Release: 2**

# **FPIHAR3210C Conduct mechanical processor operations**

## **Modification History**

Performance criteria numbering added

## **Unit Descriptor**

### **Unit descriptor**

This unit describes the outcomes required to operate a wheeled or tracked mechanical processor in a forest environment. It requires the mandatory functions of processing trees mechanically, and segregating and stacking logs

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

This unit replaces FPIHAR3210B Conduct mechanical processor operations

## **Application of the Unit**

### **Application of the unit**

The unit involves conducting mechanical processor operations in a 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**

Not Applicable

## **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. Plan and prepare for operations | <p>1.1. Applicable <i>Occupational Health and Safety</i> (OHS), <i>environmental</i>, <i>legislative</i> and <i>organisational requirements</i> relevant to conducting <i>mechanical processor</i> operations are identified and followed</p> <p>1.2. Site <i>environmental protection measures</i> are adhered to in line with relevant legislation and regulations</p> <p>1.3. <i>Work plan</i> is reviewed and checked with <i>appropriate personnel</i></p> <p>1.4. Equipment is selected appropriate to work requirements and checked for operational effectiveness in line with manufacturer's recommendations</p> <p>1.5. Tree or <i>log</i> load placement and access requirements are identified and assessed for <i>safe working conditions</i></p> <p>1.6. <i>Mechanical processor operations</i> are <i>planned</i> in line with site procedures and <i>environmental and heritage concerns</i></p> <p>1.7. <i>Communication</i> with others is established and maintained in line with OHS requirements</p> |
| 2. Operate equipment               | <p>2.1. All work is conducted in line with work plan, environmental and OHS requirements</p> <p>2.2. Mechanical processor is operated within equipment <i>capabilities</i> and limitations, and manoeuvred to ensure safe and efficient operations</p> <p>2.3. <i>Pre-operational checks</i> are carried out on equipment and attachments in line with manufacturer's recommendations and site procedures</p> <p>2.4. Operating techniques are selected and adjusted as required to meet work requirements and <i>site conditions</i></p> <p>2.5. Mechanical processor performance is systematically monitored to ensure and maintain efficient operations</p> <p>2.6. Site <i>hazards</i> associated with crawler operations are detected and safe operating techniques are used to minimise risk</p> <p>2.7. <i>Emergency plan</i> procedures are followed in line with OHS, environmental, legal and site requirements</p>  |
| 3. Process individual trees        | <p>3.1. Movement and whereabouts of other personnel is monitored and work modified to be in line with OHS requirements</p> <p>3.2. Access and processing characteristics of fallen trees are assessed and processing is planned to ensure minimal tree damage and maximum recovery</p> <p>3.3. Required length cutting patterns are programmed or modified on processing controller to meet work plan requirements</p>   |

| <b>ELEMENT</b>                            | <b>PERFORMANCE CRITERIA</b>  |
|---|--|
|   | 3.4. Equipment is <i>positioned</i> for stable and safe access to felled tree and loads are placed within rated load/reach capacity                            |
|   | 3.5. Tree is processed to produce standard length and diameter of logs with optimal grade and length combination in line with work plan requirements           |
|   | 3.6. Equipment is safely and efficiently operated to stack pre-bunched logs/stems to facilitate subsequent recovery operations                                 |
|   | 3.7. Processing techniques are adjusted as required in response to unexpected characteristics, movement or condition of tree                                   |
|   | 3.8. Personnel safety and minimal damage to the timber and surrounding environment are ensured through method used to move timber/stems to pre-bunching site   |
|   | 3.9. Equipment is moved over pre-arranged routes with minimal damage to the environment  |
| 4. Segregate and stack logs               | 4.1. Planned landing layout and log handling procedures are identified from site and work plan instructions and checked with appropriate personnel as required |
|   | 4.2. Stacks are located to provide appropriate space for access by site equipment and to allow for the conduct of other landing operations                     |
|   | 4.3. Log stacks are positioned and <i>maintained</i> in line with planned layout and site requirements   |
|   | 4.4. Log stacks are constructed to provide stability and minimise problems from slippage and falling of logs   |
|   | 4.5. Delivered logs are <i>visually assessed</i> and directed/moved to appropriate location for further processing or stacking                                 |
| 5. Carry out machine operator maintenance | 5.1. Equipment lock-out procedures are followed in line with OHS requirements and site procedures  |
|   | 5.2. <i>Visual inspection and fault finding procedures</i> are conducted in line with manufacturer's recommendations and site procedures                       |
|   | 5.3. <i>Routine operational servicing</i> is conducted to maintain optimum operational performance of equipment in line with manufacturer's recommendations    |
|   | 5.4. Equipment, attachments and other ancillary equipment is <i>cleaned</i> and stored in line with manufacturer's recommendations and site procedures         |
|   | 5.5. Faults, malfunctions or problems with equipment are diagnosed and reported in line with site procedures   |
|   | 5.6. Mechanical processor operation results are <i>recorded and reported</i> in line with site procedures  |

## 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; efficiently and safely process trees, segregate and stack logs
- Communication skills and interpersonal techniques sufficient to interact appropriately with colleagues and others in the workplace; interpret, apply and convey information in written, diagrammatic and/or verbal form
- Literacy skills sufficient to accurately record and report workplace information, and maintain documentation
- 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 mechanical processor operations
- Environmental protection requirements, including the safe disposal of waste material and the cleaning of plant, tools and equipment
- Organisational and site standards, requirements, policies and procedures for mechanical processor operations
- Detailed range of products
- Operational procedures and checks including start-up and shut-down procedures
- 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 and maintenance including equipment safety requirements
- Appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- Procedures for recording and reporting workplace 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 conduct mechanical processor operations in line with 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 mechanical processor operations
- following organisational policies and procedures relevant to mechanical processor operations
- communicating effectively and working safely with others in the work area
- planning, preparing and carrying out mechanical processor operations to safely and efficiently process trees mechanically and segregate and stack logs
- conducting pre-operational checks and routine operational servicing of equipment

### Context of and specific resources for assessment

- 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

## EVIDENCE GUIDE

### Method of assessment

- 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 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.



## 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
- heritage and traditional land owner issues

### **Organisational requirements may include:**

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

**RANGE STATEMENT**

- 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)

## RANGE STATEMENT

### **Mechanical processor**

may be wheeled or tracked

### **Environmental protection measures**

may include action to limit the impact to:

- ground growth and canopy

may include action to limit the impact of:

- soil and water
- general forest lean
- wind speed and direction
- fallen trees
- density of trees
- ground slope
- ground hazards
- obstacles

### **Work plan** is to include:

- instructions for mechanical processor operations including trees to be processed and cutting length requirements

and may include information about:

- landing layouts
- site plans
- forest operational plans
- emergency procedures in case of fire and/or accident
- instructions for the environmental monitoring of work and procedures
- environmental care requirements relevant to the work

### **Appropriate personnel** may include:

- supervisors
- clients
- colleagues
- managers

### **Logs** may include:

- full range of species
- size
- conditions encountered in local harvesting operations
- softwood or hardwood

### **Safe working conditions** may include:

- identification of risks and hazards
- unsafe ground
- fences
- holes, pot holes

**RANGE STATEMENT**

- materials
- vehicles
- abandoned equipment
- personnel
- adverse weather conditions (electrical storms, floods)
- fires

## RANGE STATEMENT

- Mechanical processor operations** must include: the mechanical processing of trees and segregating and stacking of logs and may include:
- the mechanical falling of trees
  - the de-barking, pre-bunching and loading of logs
- Planning** requires ensuring minimal equipment and product movement during operations including determining level and stable surfaces for safely relocating logs
- Environmental and heritage concerns** may include:
- dust
  - noise
  - water
  - flora and fauna
  - heritage legislation
  - culturally sensitive sites and artefacts
  - plantations
  - native forest
- 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
- Capabilities** of equipment and/or attachments may include:
- efficient and safe operating speed
  - duration of operation
  - type of activities performed
  - weight and/or load limitations
  - operating limitations
- Pre-operational checks** are conducted to ensure equipment and attachments have been set-up correctly, the systems are performing accurately and operating to optimum performance and may be to:
- visual and audio warning devices and lights
  - engine and stop engine lights
  - fluid levels

**RANGE STATEMENT**

- cab display instrumentation and gauges
- on-board computer systems, if relevant

and may also involve:

- start-up, park and shut-down procedures including safety mechanisms operation (horn, operating lights), correct location of equipment, vehicle security

## RANGE STATEMENT

**Site conditions** may include:

- wet, dry
- day, night
- stability of ground
- broken ground
- slope of working surface
- location of water table

**Hazards** may include:

- uneven/unstable terrain
- trees
- fires
- overhead and underground services
- bridges
- buildings
- excavations
- traffic
- embankment
- cuttings
- structures and hazardous materials

**Emergency plan** may include:

- notification of authorities
- evacuation procedures
- isolation procedures
- equipment shut-down procedures
- clean up
- first aid
- use of personal protective equipment and guarding
- access and exit

**Positioning**

of equipment is to ensure:

- machine stability to minimise movement during and between processing operations
- safe access to felled tree
- safe processing and placement clearance for the efficient extraction of processed logs

**Maintenance**

of log stacks includes:

- providing for anticipated stock levels
- stock rotation requirements
- size
- segregation of lengths
- species
- grades

## RANGE STATEMENT

### Visual assessment

of logs includes:

- identifying and determining species
- diameter, length, grade
- landing layout
- stock rotation requirements

### Visual inspection and fault finding procedures may include:

- vehicle number
- danger tag
- personnel proximity
- tyres and rim condition
- wheel nuts and studs
- light positioning and cleanliness
- radiator top up tank
- oil leaks, fuel leaks, water leaks
- no combustible material around exhaust
- damage to equipment
- portable fire extinguisher
- fire suppression system
- cab mounts
- windows
- engine oil to be checked before starting engine
- grease lines
- cab conditions

### Routine operational servicing may include:

- checking fluid levels
- greasing
- tightening loose fittings
- filter changing

### Cleaning methods may include:

- water
- steam
- degreasing
- vacuum
- forced air

### Records and reports may include:

- end of shift documentation
- work log
- supplies log
- computer readings

and may be:

- manual
- using a computer-based system or another appropriate organisational communication



**RANGE STATEMENT**

system

**Unit Sector(s)**

Not Applicable

**Competency field**

**Competency field**      Harvesting and Haulage