<table>
<thead>
<tr>
<th>Title</th>
<th>Make logs using a mechanised processing machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>4</td>
</tr>
<tr>
<td>Credits</td>
<td>18</td>
</tr>
</tbody>
</table>

**Purpose**

This unit standard is intended for people employed in a mechanised log processing role in a forestry operation.

People credited with this unit standard are able to: demonstrate knowledge of planning requirements for mechanised processing, defects and features in logs which determine log suitability for particular grades, log cutting instructions for mechanised processing, mechanised processing machines, and chain shot; and operate a processing machine to make logs.

**Classification**

Forestry > Forest Mechanised Harvesting

**Available grade**

Achieved

**Explanatory notes**

1. Mechanised harvesting operations may include machines which carry out any one of, or any combination of – felling, delimbing, bunching, and making logs. Therefore, this unit standard may be completed on its own or in conjunction with any combination of: Unit 6943, Delimb tree lengths using a mechanised delimber; Unit 6945, Fell trees using a mechanised harvesting machine; and/or Unit 6947, Bunch tree lengths for extraction or processing.

2. Definitions

   - **Accepted industry practice** – approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.
   - **Cutting instruction** refers to a list of log grades to be cut showing priorities, lengths, diameters, defects not allowed, etc. This is used by the log maker to optimise log value recovered from a stem.
   - **Forestry Operations** include forest establishment, silviculture, harvesting, forest inventory, and forest and crew management.
   - **PPE** refers to personal protective equipment and may include but is not limited to high-viz, protective clothing, gloves, face and eye protection, safety helmet, footwear, hearing protection, and safety devices.
   - **Worksite procedures** refer to documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements.
Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of planning requirements for mechanised processing.

Evidence requirements

1.1 Machine capability is described in accordance with manufacturer’s recommendations.

Range stem diameter, stem weight, stem length, stem features.

1.2 Planning requirements for the processing area are explained in accordance with the accepted industry practice.

Range stable site, clear of other operations, room to manoeuvre, environmental management considerations, safety, signs, stockpiles for tree lengths and logs, waste management.

1.3 Job prescription requirements for log making are explained in accordance with the accepted industry practice.

Range quality requirements, debris removal, environmental constraints.

Outcome 2

Demonstrate knowledge of defects and features in logs which determine log suitability for particular grades.

Evidence requirements

2.1 Defects in twenty logs are identified and described in accordance with the accepted industry practice.

Range may include but is not limited to – splits, shatter, slab wood, stem damage, dead limbs, decay, rot, insect attack, knot collar, occluded scars, stem fractures, taper, nodal swelling, out of round, off centre pith, spike knots, sweep, wobble, kink, fluting, incorrect cutting, machine damage.

2.2 Features relative to the log specifications are identified and described in accordance with the accepted industry practice.

Range may include but is not limited to – pruned or un-pruned, internodal length, branch size, knot size, small and large end diameter, length.

2.3 Effects of features and defects in logs are explained in accordance with the accepted industry practice.

Range effects on – quality, value, end use.
Outcome 3
Demonstrate knowledge of log cutting instructions for mechanised processing.

Evidence requirements

3.1 Action to be taken when cutting instructions change is explained in terms of worksite procedures.

3.2 Priority cuts are stated according to cutting instructions.

3.3 Preferred lengths for various cuts are stated in accordance with the cutting instructions.

3.4 Log marking requirements for the operation are stated according to cutting instructions.

Outcome 4
Demonstrate knowledge of mechanised processing machines.

Evidence requirements

4.1 Components of the processing head are identified and their function explained in accordance with the accepted industry practice.

Range may include but is not limited to – accumulater arms, measuring system, drive wheels, cutting unit, marker unit.

4.2 Safety features on the machine are identified and function explained in accordance with the accepted industry practice and manufacturer’s recommendations.

Range may include but is not limited to – operator protection structures, seat belts (or other safety restraint), fire systems, handrails, steps, lockout system, warning systems.

4.3 Safe operation and movement of the machine are explained in terms of manufacturer’s recommendations and worksite procedures.

Range steering, travel speeds, slope, lifting capacity, reach, operator skill.

Outcome 5
Demonstrate knowledge of chain shot.

Evidence requirements

5.1 Chain shot is defined and common causes of chain shot are described in accordance with the accepted industry practice.
5.2 Ways to minimise or control chain shot are described in accordance with the accepted industry practice.

Range maintenance, use, inspection of chains.

5.3 Precautions put in place to protect the operator and other personnel from chain shot are described in accordance with the accepted industry practice.

5.4 Operator responsibilities to maintain the level of safety for themselves and others are described in accordance with worksite procedures.

Range distance, head orientation, maintenance.

Outcome 6

Operate a processing machine to make logs.

Evidence requirements

6.1 PPE is worn in accordance with the accepted industry practice and worksite procedures.

6.2 Hazards are identified and managed in accordance with the accepted forestry industry practice and the accepted industry practice.

6.3 The reason for on-going hazard identification is explained in accordance with the accepted industry practice.

6.4 Factors that may change hazards or introduce new hazards are described in accordance with the accepted industry practice.

Range change in location, change in landing layout.

6.5 Machine is positioned to facilitate efficient log making in accordance with worksite procedures.

6.6 Measuring equipment is calibrated in accordance with the manufacturer’s recommendations and worksite procedures.

Range may include but is not limited to – length measuring, diameter measuring, find end (electronic eye), density measurement.

6.7 Stems are visually assessed according to log specifications and cutting instructions.

6.8 Stems are positioned and supported and cutting equipment controlled, in accordance with manufacturer’s recommendations.

6.9 Cutting options are determined, length and diameter combinations measured, and logs cut, in accordance with log specifications and cutting instructions.
6.10 Stems and logs outside capabilities of machine are identified and alternative processing organised in accordance with worksite procedures.

6.11 Stem damage and wood wastage is within job prescription requirements.

6.12 Processed logs are placed to meet the requirements of the operation in accordance with machine capabilities and worksite procedures.

6.13 Communication is maintained between worksite personnel in accordance with the accepted industry practice.

Range audio, visual.

6.14 Quality requirements of log specifications, cutting instruction and value recovery are met.

6.15 Debris clearance is organised to meet worksite procedures.

---

<table>
<thead>
<tr>
<th>Planned review date</th>
<th>31 December 2020</th>
</tr>
</thead>
</table>

---

### Status information and last date for assessment for superseded versions

<table>
<thead>
<tr>
<th>Process</th>
<th>Version</th>
<th>Date</th>
<th>Last Date for Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td>1</td>
<td>8 November 1996</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Revision</td>
<td>2</td>
<td>19 June 1998</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Review</td>
<td>3</td>
<td>5 December 2000</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Review</td>
<td>4</td>
<td>22 May 2008</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Revision</td>
<td>5</td>
<td>16 July 2010</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Review</td>
<td>6</td>
<td>19 March 2015</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Review</td>
<td>7</td>
<td>10 December 2015</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

### Consent and Moderation Requirements (CMR) reference

0173


**Please note**

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.
Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact Competenz at qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.