

Title	Demonstrate knowledge of, and fell trees using a mechanised felling machine in a thinning operation		
Level	4	Credits	20

Purpose	<p>This unit standard is intended for people employed as a harvesting machine operator in a mechanised thinning operation.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of planning requirements and produce a cut plan for a mechanised thinning operation, a mechanised felling machine used in a thinning operation, and mechanised felling techniques for a thinning operation; and fell trees using a mechanised felling machine in a thinning operation.</p>
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Classification	Forestry > Machine Operations - Forestry
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Available grade	Achieved
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Guidance Information

- 1 Legislation relevant to this unit standard includes the Health and Safety at Work (HSW) Act 2015; the Resource Management (National Environmental Standards for Plantation Forestry) Amendment Regulations 2018; and any subsequent amendments.
- 2 References
Approved Code of Practice (ACOP) for Safety and Health in Forestry Operations, December 2012, available from www.worksafe.govt.nz.
 New Zealand Forest Owners Association, *Forest Practice Guides* (2019), and any subsequent amendments, available from <https://www.nzfoa.org.nz>.
- 3 This unit standard is intended to be used for production thinning or thin to waste operations, using tracked or wheeled machines, and a range of felling head types, for example – chainsaw, shears.
- 4 Definitions
Accepted industry practice refers to approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.
Cull trees refer to trees selected to be felled as part of the thinning operation.
Job prescription refers to any written instructions for the operation and may include maps, harvest plans or cut plans.

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.

5 Assessment information

This unit standard must be assessed on-job.

All activities and evidence must be carried out in accordance with accepted industry practice and worksite procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of planning requirements and produce a cut plan for a mechanised thinning operation.

Performance criteria

1.1 Job prescription requirements for a mechanised thinning operation are explained.

Range residual stocking, spacing, residual tree damage, process for dealing with multi leaders and uprooted trees.

1.2 Planning requirements for work areas are explained.

Range may include but is not limited to – stand assessment, felling area sequence, extraction, manual operators, other machines, ground conditions, slope assessment, room to manoeuvre, environmental considerations, stockpiles for tree lengths or logs, chain shot management; evidence of eight is required.

1.3 The reason for on-going risk management is explained.

1.4 Factors that may alter risks or introduce new risks are described.

Range evidence of three factors is required.

1.5 Factors that influence the felling plan are explained.

Range may include but is not limited to – opening face, terrain, tree characteristics, changes in conditions, production requirements, hazards, extraction requirements. evidence of five factors is required.

1.6 Felling plan is produced for the mechanised thinning operation.

Outcome 2

Demonstrate knowledge of a mechanised felling machine used in a thinning operation.

Performance criteria

- 2.1 Machine capability is described in accordance with the manufacturer's recommendations.
- Range slope, ground conditions.
- 2.2 Components of the felling head are identified, and their function explained in accordance with manufacturer's specifications.
- Range cutting mechanism, holding mechanism, rotator mechanism.
- 2.3 Felling head capability is described in accordance with manufacturer's recommendations.
- Range stem diameter, tree weight.
- 2.4 Safety features on the mechanised felling machine are identified and their function explained in accordance with manufacturer's specifications.
- 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; evidence of six is required.

Outcome 3

Demonstrate knowledge of mechanised felling techniques for a thinning operation.

Performance criteria

- 3.1 The positioning of the machine and felling head is explained.
- Range stability, distance from tree, felling direction, tree damage.
- 3.2 Methods of felling difficult trees with a mechanised felling machine are explained.
- Range multi leader, leaning tree, edge tree.

Outcome 4

Fell trees using a mechanised felling machine in a thinning operation.

Performance criteria

- 4.1 Cull trees are selected in accordance to meet the job prescription.

- 4.2 The risks specific to felling trees using a mechanised felling machine are assessed and controlled.
- 4.3 Risks, machine capability, and operator capability are continually assessed as work progresses.
- 4.4 Area to be thinned is assessed to confirm the work requirements align with the job prescription.

Range may include – opening up felling faces, extraction, roads, waterways, boundaries, hazards and risks.
- 4.5 Terrain is negotiated, and machine and felling head are positioned.
- 4.6 Trees are thinned in accordance with requirements of the job prescription.

Range stocking, spacing, stump height, minimal stem and butt damage, minimal damage to residual trees, trees cut from stump, tree selection.
- 4.7 Trees are directionally felled.

Range environmental considerations, extraction considerations.
- 4.8 Trees outside machine capability are identified for alternative felling methods.
- 4.9 Machine and tree movement is smooth and controlled.
- 4.10 Communication with other crew members is maintained to ensure thinning requirements are met.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 August 2020	N/A
Rollover	2	26 April 2024	N/A

Consent and Moderation Requirements (CMR) reference	0173
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Muka Tangata - People, Food and Fibre Workforce Development Council qualifications@mukatangata.nz if you wish to suggest changes to the content of this unit standard.