

<b>Title</b>	<b>Shovel and bunch tree stems or logs</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>10</b>

<b>Purpose</b>	<p>This unit standard is intended for workers in a forestry operation who are using a machine to shovel and bunch tree stems or logs for extraction.</p> <p>People credited with this unit standards are able to: explain factors affecting stability of the machine to be used for shovelling and bunching tree stems or logs; and shovel and bunch tree stems or logs.</p>
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<b>Classification</b>	Forestry > Forest Mechanised Harvesting
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	One of – Unit 6935, <i>Operate an excavator based tracked machine in a forestry operation</i> ; or Unit 24590, <i>Operate a self-levelling machine in a forestry operation</i> ; or demonstrate equivalent knowledge and skills.
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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 <https://worksafe.govt.nz/>.  
 New Zealand Forest Owners Association, *Forest Practice Guides* (2019), and any subsequent amendments, available from <https://www.nzfoa.org.nz>.
- 3 Before assessment against this unit standard candidates must have demonstrated competency with operation of the machine to be used in the assessment. Competency is as defined in the Approved Code of Practice for Safety and Health in Forest Operations.
- 4 Definitions  
*Accepted industry practice* – approved codes of practice and standardised procedures accepted by the wider forestry industry as examples of best practice.

*Operational plan* – any plan detailing how operational tasks will be carried out. Examples of operational plans include job prescriptions, harvesting plans, felling plans, extraction plans.

*Job prescription* refers to any written instructions for the operation and may include maps, harvest plans or cutting 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.

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## Outcomes and performance criteria

### Outcome 1

Explain factors affecting stability of the machine to be used for shovelling and bunching tree stems or logs.

Range may include but is not limited to – tracked or wheeled machines operating with or without cable assistance.

### Performance criteria

- 1.1 The maximum slope considered safe for mechanised operations is stated in accordance with accepted industry practice and workplace procedures.
- 1.2 The combined effect of slope, ground conditions, and ground cover on machine stability and maximum safe slope is explained.
- 1.3 The interaction of the forces of traction and gravity with the machine's centre of gravity on a slope, and the effect on stability is explained.
- 1.4 The main cause of rollover on slopes is identified and ways to mitigate this are explained.
- 1.5 The effects of lifting, slewing, and releasing a load on flat ground, and on a slope, are compared in relation to changes in machine stability.
- 1.6 Factors affecting maximum lift and throw are described.
- 1.7 Techniques for increasing traction when working on a slope are described in accordance with accepted industry practice.
- 1.8 Techniques which improve machine stability while shovelling and bunching are described in accordance with accepted industry practice.

### Outcome 2

Shovel and bunch tree stems or logs.

**Performance criteria**

- 2.1 Requirements of the operational plan are identified.  
 Range requirements may include but are not limited to – signage, production volume, minimising damage to stems and standing trees, presentation for extraction or processing.
- 2.2 The risks specific to shovelling and bunching tree stems or logs are assessed and controlled in accordance with accepted industry practice.
- 2.3 Risks, machine capability, and operator capability are continually assessed as work progresses in accordance with accepted industry practice.
- 2.4 The machine is walked into position on the slope.  
 Range up and down slope, across slope.
- 2.5 Techniques to increase traction and maximise stability of the machine before shovelling and bunching are demonstrated in accordance with accepted industry practice.
- 2.6 Techniques to maximise stability of the machine during shovelling and bunching operations are demonstrated in accordance with accepted industry practice.
- 2.7 Techniques for grappling logs and pulling logs from where they sit are demonstrated in accordance with accepted industry practice.
- 2.8 Shovelling is carried out within the capacity of the machine, the capability of the operator, and in accordance with accepted industry practice and workplace procedures.  
 Range uphill, downhill.
- 2.9 Shovelling and bunching are carried out in accordance with the requirements of the operational plan.

<b>Replacement information</b>	This unit standard replaced unit standard 6947.
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<b>Planned review date</b>	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	26 October 2017	N/A
Review	2	26 March 2020	N/A
Rollover	3	26 April 2024	N/A

**Consent and Moderation Requirements (CMR) reference**

0173

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](mailto:qualifications@mukatangata.nz) if you wish to suggest changes to the content of this unit standard.